

Aerial Perspectives, Landscape, and Power: Politicized Images in Art and Visual Culture

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Abstract

Aerial Perspectives, Landscape, and Power: Politicized Images in Art and Visual Culture

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As aerial perspectives become increasingly prevalent in contemporary visual culture, it is essential to develop more fluency with the visual language that produces these views of the world. This thesis takes an interdisciplinary approach to consider the aerial perspective as a dominant twenty-first century visual paradigm, across art and multiple forms of visual culture. Using case studies drawn from contemporary art and politicized media images, including drone and satellite imagery, the frequently asymmetrical relationships between sky and ground are analyzed according to key concepts such as invisibility and visibility, omniscience, scale, distance, and resolution. Select artworks – by Trevor Paglen, Fazal Sheikh, Stephanie Comilang, and Sophie Ristelhueber – as well as projects undertaken by visual investigation teams, are able to reveal the relationship between top-down views and forms of power such as imperialism, capitalism, surveillance, and militarism. This contemporary visual paradigm is also historicized through examples of landscape art from the Western tradition, including targeted landscapes that depend on Renaissance one-point perspective, sixteenth-century “world landscapes,” and nineteenth-century Romantic landscapes. The thesis showcases the work of visual investigation teams that draw upon opensource analytic techniques to challenge state-driven narratives, while equipping digital citizens with the skills to do likewise. Ground-level testimony and mobile storytelling are also brought forward, as ways to dismantle the omniscient voice traditionally associated with the “god’s-eye” view.

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Introduction

This thesis is about aerial perspectives. It is also about landscapes. An argument that underpins the study is that perspective offers as much information about landscape, as landscape does about perspective. The goal of this study is to better understand the relationship between aerial perspectives and landscapes using art historical traditions of landscape as my groundwork. In the study, I consider aerial perspective(s) in the plural sense, as I likewise consider landscape(s). Just as there is no standard aerial perspective, but rather a range of aerial angles holding each their own set of information, so too can it be said that landscapes and their representations are vast and varied.

Referring to landscape images drawn from Western art history, I address how landscapes, both real and represented, are expressions of power, and that perspective is a feature that can amplify or diminish that power. Historically speaking aerial views were expressions of empire and the property of state and military; while contemporary iterations of air power are linked to early modern war, a period during which their innovation was most pronounced. These histories remain. No matter how seemingly benign the application of aerial views today (and there are many, ranging from wedding photos to cinematic views), it must be acknowledged that aerial perspectives derive from war; their purpose being to make the enemy more visible, to make the world a target. This linkage, argues visual culture scholar Nicholas Mirzeoff, establishes optical distinctions between seeing and visualizing: “Seeing is actually a system of sensory feedback from the whole body, not just the eyes. Visualizing, by contrast, uses airborne technology to depict the world as a space for war.”¹

¹ Nicholas Mirzeoff, *How to See the World*, (New York: Pelican), 9-10.

Mirzeoff's observation echoes one of the most insistent critics of the relation between war and vision, Paul Virilio, who asserts, "For men at war, the function of the weapon is the function of the eye."² The events of 9/11, from which President George W. Bush launched the "war on terror," known also as the "long war," the "forever war," or the "everywhere war" describes an enduring "globalized" state of potential readiness in the threat of spontaneous terrorism.³ As such, Mirzeoff's "visualizing" and Virilio's "eye as weapon" provide apt models for the anxious optics alert to the potential physical manifestation of invisible threat. Contributing to this linkage between sight and violence, post-colonial scholar Rey Chow comments on the world post-atomic bomb, offering that a new anxious register emerges in an age of drone warfare and long-range missiles: "...we may say that in the age of bombing, the world has also been transformed into – is essentially conceived and grasped as – a target. To conceive of the world as a target is to conceive of it as an object to be destroyed."⁴ These claims that assert the legacies between vision and war, perspective and targeting, form a foundation of the research here, which remains ever-attentive to the fact that aerial perspectives cannot be decoupled from the targeting intent of their original design.

By engaging with existing scholarship on aerial perspectives, I revisit the historical legacies and art historical manifestations of aerial perspectives to chart the paradigmatic shift that now positions the aerial perspective as the dominant viewpoint from which the world is now seen and understood. There exists a substantial body of research dedicated to aerial perspectives, much of which focuses on their technological aspects. For instance, Derek Gregory has argued, in the case of drones, that too often critical discourse is fixed on the drone itself and not enough on their

² Paul Virilio, *War and Cinema: The Logistics of Perception* (1984), Trans. Patrick Camiller (New York and London: Verso, 1989), 20.

³ See for example, Gore Vidal, *Perpetual War for Perpetual Peace: How We Got to Be So Hated* (New York: Thunder's Mouth Press/Nation Books, 2002); Dexter Filkins, *The Forever War* (New York: Alfred K. Knopf, 2008); Derek Gregory, "The Everywhere War," *The Geographical Journal* 177 No. 3 (2011): 238-250.

⁴ Rey Chow, *The Age of the World Target: Self-Referentiality in War, Theory, and Comparative Work* (Durham, NC and London: Duke University Press, 2006), 31.

environments.⁵ Gregory observes that the complexities of geopolitics of remote warfare, contribute to the design of “drone geographies.”⁶ This term describes the distinction between parts of the world from which drones are owned and controlled (for e.g. U.S.A.), from those under their attack (such as, Afghanistan, Yemen, Syria). Gregory faults a contemporary critical discourse, which he considers “unduly preoccupied with the technical (or techno-cultural) object – the drone – and virtually ignores these wider dispositions and propensities.”⁷ Barney Warf proposes similarly that satellites contribute geographical ordering through the advancement of Western conceptions on worldviews. “In the long historical context of Western construction of vision,” he writes, “satellites represent the latest chapter in a changing series of ways in which Earth, and the people who inhabit it, have been viewed.”⁸ Warf offers that the occularcentrism that emerged out of the Renaissance, which subsequently informed developing technologies and epistemologies, laid the groundwork for contemporary cultural and political dynamics of satellite imagery.⁹

A study of aerial perspectives via landscape traditions is a way to expand the discourse on these aerial environments that the geographers Gregory and Warf identify as lacking.¹⁰ One intention of this thesis is to pay attention to the atmospheres and surfaces that form aerial environments, which is a domain not limited to the sky. As media scholar Lisa Parks argues, there is ongoing communication between sky and ground, which she terms “vertical mediation.” Parks defines this concept as the cultural processes of communication and materialization required to achieve vertical hegemony.¹¹ Informed by these observations, throughout the thesis, I

⁵ Derek Gregory, “Drone Geographies,” *Radical Philosophy* (Issue 183, Jan/Feb. 2014).
<https://www.radicalphilosophy.com/article/drone-geographies>

⁶ Ibid.

⁷ Ibid.

⁸ Barney Warf, “Dethroning the View from Above,” *Down to Earth: Satellites, Industries and Cultures*, Eds. Lisa Parks and James Schwoch (New Jersey: Rutgers, 2021), 47.

⁹ Ibid., 46.

¹⁰ Lisa Parks and Caren Kaplan make similar arguments in their co-edited *Life in the Age of Drone Warfare* (2017).

¹¹ Lisa Parks, *Rethinking Media Coverage: Vertical Mediation and the War on Terror* (New York and London:

acknowledge the conversations between aerial and terrestrial environments, careful not to treat them as binaries but rather as fields in response to one another.

The trajectory of the thesis will follow a descending logic. I begin Chapter 1 in orbit with a discussion of satellite imagery and their politics of production, and end Chapter 4 at ground-level with a focus on human testimony and oral history. In the territory between are investigations of various aerial modalities and the spectra in which they operate and those they affect. For example, I explore satellites in orbit, drones and airplanes in airspace, as well as applications of aerial perspectives as in architectural 3-D modeling, whose “atmosphere” is the digital realm. Through this I examine the ability of these viewpoints to produce landscape from above—interrogating omniscience and imagining the potential of these perspectives put in conversation with partial, situated knowledges at ground level. This is to say, this thesis is not solely about domination—it is also a series of exercises in thinking about how aerial perspectives might interrupt vertically ordered power structures.

The majority of the case studies I have chosen, whether artworks or examples of visual culture, are situated in the Middle East: I include case studies from Iraq, Syria, Kuwait and Palestine. Other case studies speak to geographies of the American southwest, and in one case, the experience of displacement in the context of Hong Kong, and the Philippines. In some instances, the case studies consist of politicized images, while in others they are artworks that offer critical perspectives on the contemporary visual paradigm in question. A particular type of landscape that receives notable attention in the thesis is the desert. This was an interest that developed over the course of the research, as deserts, for reasons which will be discussed in the thesis, have potent relationships with aerial perspectives. Deserts are essential to the design, testing, and control of

Routledge, 2018), 3.

aerial power as in the Creech Air Force Base in Nevada, while they also are sites made frequent target of aerial violence. For example, Eyal Weizman reveals that the majority of drone strikes in the Middle East take place on the 200mm aridity line, which he calls the “desert shoreline.”¹²

I deliberately chose my cases studies to explore various aspects of aerial views. However, the relationships between the case studies are also important, illustrating the transnational entanglements of aerial power that form the global aerial environment. These networks are formed of complex techno-military economies that involve exchanges of munitions, technologies, monies, air space, territories, and personnel. Studies of aerial perspectives, attached to their technologies, provide an entrance to consider notions of home and away, often expressed through the official terms of “domestic” (as in defence) and remote (as in warfare). Satellites and drones, speak to the matrices of vertical and horizontal mobilities that form asymmetrical power structures based on geopolitical logics. For example, satellites, the majority owned and operated by the West impose a Western hegemony on communication and epistemology, while drones enact aerial violence in non-Western countries. Meanwhile, commercial air travel, whose accessibility reveals vertical class orderings, also has lateral limitations in that not all citizens of the world have equal agency to cross transnational borders.

My project honours an interdisciplinary approach, which is what an understanding of aerial perspectives requires. In academic terms, my fields of study are art history, geography, and literature, but in reality, the research extends much further to include media and communication studies, oral history, AI ethics, anthropology, sociology and international law. Remarkably, aerial perspectives are implicated in all these fields therefore each has its own set of approaches and angles that together offer the possibility of a more comprehensive understanding of views from

¹² Eyal Weizman, “Part Three: Ground Truths,” *Forensic Architecture: Violence at the Threshold of Detectability*, (New York: Zone Books, 2018), 217-306.

above. The foundation of my study rests on the Western art historical tradition of landscape, however, insofar as it engages with a dynamic media environment of ever-developing technology. These intersections traverse social, political, and economic realms as well as those of art, influencing the formation of worldviews. Relative to the art historical timeline, landscape as a Western pictorial tradition that was recognized as a subject worthy of itself only became firmly established in the 16th century. Before this, landscape served as a backdrop to religious narratives or was glimpsed from interior viewpoints through window or doors.

Myriad images of landscape taken from above offer a range of effects from whimsical or apocalyptic. Frequently pictured are landscapes in ruin, which now occupy significant space on social media and on digital news platforms. The aerial view is the modality through which mediated views of landscape are at present most frequently presented. The twenty-first century is not a moment of pastoral landscape, such as those delightful examples of country walks made famous by the Dutch in the sixteenth and seventeenth century or the nineteenth-century Impressionists. It is worth considering then what potential harm may be done in making easy associations about what landscape paintings, drawings, or photographs are, as such narrow definitions deny other iterations the critical attention they deserve. One argument that I advance in the thesis is that landscapes in the current moment of climate emergency and continual conflict require a critical approach and a vocabulary that concretely situate landscapes as political environments.

It is worthwhile as well to consider what landscape is as a genre, or to ask whether in its diverse manifestations of expression, it can be classified a genre. W.J.T. Mitchell believes not, and begins his “Theses on Landscape,” with the assertion that “Landscape is not a genre of art but a

media”;¹³ all other points of his manifesto arrange themselves around this claim. Mitchell’s scholarship on landscape, images, and visual culture is fundamental to my research. His essay “Imperial Landscape” provides a dominant framework for investigating the colonial, racial and gendered power structures reflected in landscapes, as social and cultural constructs. Mitchell begins his celebrated *Landscape and Power* stating, “The aim of this book is to change ‘landscape’ from a noun to a verb.”¹⁴ This same approach to landscape, which sees it as something in motion rather than at rest underpins my study. From here, I reflect on how perspective contributes to that activation. Meanwhile, Anthropologist Barbara Bender offers that landscape in Western discourse (a concept that she considers “loaded and problematic”) can be defined in multiple ways, “but all incorporate the notion of ‘time passing.’”¹⁵

Thus landscape as solid geology (as in “a granitic landscape,” “a karst landscape”) speaks to evolutionary time, aeons of time [...] Landscape as land form or topography (a desert landscape,” a riverine landscape”), again, has great time depth may involve human interventions, human histories. With landscape as mantled (as in “a landscape of peat and moor,” “a tropical landscape”) the processes quicken, sometimes invoking seasonal transience. Landscape as land-use (“an arable landscape,” “a country house landscape,” “a plantation landscape”) speaks of things done to the land—action and movement, the effects of historically specific social/political/cultural relationships. And there are many other sorts of peopled definitions of landscape: historical landscapes, landscapes as representation, landscapes of settlement, landscapes of migration and exile, and most recently perhaps, phenomenological landscapes, where the time duration is measured in terms of human embodied experience of place and movement, of memory and expectation. The list could surely be extended, but whatever the focus, time passes.¹⁶

Bender’s list gives an overview of the range of fields that take interest in landscape, and which influence its definition. This survey offers a helpful framework for my exploration of landscape that takes interest in and is undertaken through a variety of disciplines. One aspect to

¹³ W.J.T Mitchell, *Landscape and Power* (Chicago: University of Chicago Press, 2002),5.

¹⁴ *Ibid.*, 1.

¹⁵ Barbara Bender, “Time and Landscape,” *Current Anthropology* (Vol. 43, Supplement, Aug.- Oct.,2002),103-112.

¹⁶ *Ibid.*

which I pay considerable attention is the conversations around landscape, which vary between and intersect across disciplines. Of specific interest to my investigation is the language and focus of landscape description, which varies from one field to another: that is, what is being looked at (what features are salient or made salient); and how these features are or are not being described. For example, when looking at a landscape image, a geologist will observe it with an eye trained to evidence of rock and mineral formation, while an art historian may look at that same image attentive to features of composition and its pictorial antecedents. My research takes into account these varied perspectives, looking at ways in which one field can give to another towards understanding landscape, while using the aerial view as a lens, container, or conduit for these cross-disciplinary assemblages.

Two propositions underpin Bender's conceptualization of landscape, which are fundamental to my study: "The first: *Landscape is time materialized*. Or, better, *Landscape is time materializing*: landscapes, like time, never stand still. The second: *Landscapes and time can never be "out there": they are always subjective.*"¹⁷ Her first thesis on landscape offers an important departure point for my thinking through both landscape and perspectives, both of which I approach in an active sense—as processes and as concepts that *do* things, rather than *are* things. Her proclamation that landscape is not objective or neutral, also dovetails with a similar claim around technology that is foundational to this study. Technology rather than being neutral and objective is built on and operationalizes systemic biases, as argued by a range of scholars and artists included in this thesis.¹⁸

¹⁷ Bender, "Time and Landscape," 103.

¹⁸ Examples of such scholars include, Lisa Parks (media studies), Caren Kaplan (feminist studies), Ruha Benjamin (sociology), Safiya Umoja Noble (information studies), Derek Gregory (geography), Hito Steyerl (art and film studies), and Trevor Paglen (art and geography).

That aerial perspectives are so dominant in visual culture marks a significant paradigm shift, as since the Renaissance, the world and its constituents have been traditionally and dominantly framed on the horizontal orientation of linear perspective. This mathematical framing of space reflects the spirit of the Renaissance, which, as Warf describes, departed from the “complex convoluted visual and aural worlds” that defined the mediaeval world to emphasize instead “homogeneous, ordered visual fields.”¹⁹ Following the mathematical framing of space in the Renaissance, which can be seen as an exercise of colonial ordering that imposed European metrics, standards and values, a trajectory of the rising viewpoint can be witnessed as Flemish landscapists such as Patinir (1480) and Brueghel (ca.1525) and the German painter and architect, Albrecht Altdorfer (1480) subverted the strict formula of Renaissance perspective. Using a system of scale that abolished those norms, these artists established landscape as its own subject through what was known as the “world landscape” (a translation of the German *Weltlandschaft*). Perhaps it is notable that it is within and through the subject of landscape that this initial subversion of perspective unfolds. Artists such as Brueghel whose scale is said to “jump” can be considered antecedents to the distortion of shape and scale that would emerge from the “nested view” of the ground through aerial technologies.²⁰

Although a comprehensive historiography of the rising viewpoint in art history surpasses the scope of the present project, select examples from influential moments in the history of perspective will be used to demonstrate its historical vestiges in contemporary aerial imagery. Along with the Renaissance, another such notable period is the Romantic era that began in the late eighteenth century. The art produced at this time was imbued with a combined sense of awe,

¹⁹ Warf, *Dethroning the View from Above*, 44.

²⁰ Karsten Harries, *Infinity and Perspective* (Cambridge: MIT Press),98. Harries applies this comment specifically to Bruegel’s *Landscape with the Fall of Icarus* (1558).

apprehension, and terror associated with the sublime in relation to the vastness and power of nature. These sentiments represented a response to the intense development and destruction of the Industrial Revolution. The nineteenth-century photographic tradition of the American Southwest can be seen as an extension of this mandate of exploration and exploitation which was also invested with a sense of awe. The artist Trevor Paglen explains that pioneering photographers, such as Eadweard Muybridge and Ansel Adams, can be seen as human antecedents to reconnaissance satellites, as they were funded by the U.S. Department of War. This fact reveals the diverse and sometimes competing applications and interests of landscape imagery, which make them valuable to art institutions, military analysts, resource enterprises, and activists alike.

The field of geography provides a rich range of scholarship to explore these multifarious relationships. As well, aerial perspectives are instrumental to geographic practices as they are used, for example, in digital mapping, GPS technologies, environmental modelling, and aerial land surveys. Historian, Jeremy Brotton and geographer, Denis Cosgrove acknowledge that maps are never neutral documents, and are, like landscapes images expressions of colonial ordering, as advanced by Mitchell.²¹ Aerial power and aerial perspectives are instrumental to survey mapping, as they are to wartime colonial enterprises. Aerial perspectives in many ways have the ability to affect geographies and the lives of those living within them.

Derek Gregory, a geographer who has done extensive research on drones, and whose scholarship is important to this thesis, coins the term “drone geographies” to describe the capacity of drones to reconfigure borders and alter the governing laws of territory.²² Meanwhile cultural geographer Peter Adey provides helpful guidelines in thinking on aerial mobilities and aerial geographies and the colonial influences in both these concepts. In *Aerial Life* Adey, references

²¹ See Mitchell, *Landscape and Power*.

²² Gregory, “Drone Geographies.”

Edward Saïd, in asserting the importance of the geographical imagination, “which forms more than merely an archive of cerebral thought produced through the sedimentation and accumulation of memories and histories; it actively structures future practices and performances.”²³ Geographical imaginations are activated daily through aerial imagery, so this thesis explores the potential of these images to imagine worldviews, but also how imagination can be used to counter structures of aerial dominance.

Geography and artistic practices of landscape make for a logical intersection. “The intellectual task of geography,” states geographer Denis Cosgrove in *Apollo’s Eye*, “is, by definition, to describe the globe’s surface,”²⁴ a practice that depends heavily on representation, framing, and the establishment of knowledge about the world “through commonly accepted and comprehensible forms such as the written word, statistics, maps, charts, drawings, and photographs.”²⁵ Visual art shares similar concerns of surface and representation, hence providing a logical support to the discipline of geography, with the image being essential to our understanding of place. For example, satellite imagery, presents radically new perspectives on recognizable cultural images that permits previously unimaginable (or perhaps solely imaginable) forms of knowledge about the world.

Paglen, for one, believes that the logical intersection between art and geography can be attributed to the fact that “geography provides a far more robust theoretical framework for understanding landscape than more conventional art traditions.” As ‘landscape’ in art has moved far outside the frames of painting and photography, a lot of artists are turning towards geography

²³ Peter Adey, *Aerial Life: Spaces, Mobility, Affects* (Oxford: Wiley-Blackwell, 2010), 10.

²⁴ Dennis Cosgrove, *Apollo’s Eye: A Cartographic Genealogy of the Earth in the Western Imagination*, (Baltimore: John Hopkins University Press), 2001, ix.

²⁵ Jim Ketchum, “Visual Geographies: Geoimagery,” in (Eds. Jim Ketchum et al.), *GeoHumanities: Art, History, Text at the Edge of Place*, (London and New York: Routledge, 2011), 139-142.

for methodological and analytic inspiration.”²⁶ “Landscape” in a pictorial tradition today is near analogous with the aerial view and there are many contemporary artists interrogating this culturally dominant perspective in a range of practices that call upon crossovers from distinct fields.

Literature and aerial perspectives are offered a nexus in this thesis through a concern with the interpretation or description of aerial imagery. Narrative remains a point of interest throughout the case studies, as I question the omniscient voice that tends to be associated with aerial imagery, while exploring its potential to interact with multiple voices. While I do not develop arguments in the thesis that draw explicitly from works of literature, my research is informed by novels such as *Catch-22* by Joseph Heller, and *High-Rise* by J.G. Ballard, both of which offer studies of the intense, and sometimes absurd power dynamics that emerge out of aerial environments that privilege vertical hierarchies.

Artist and theorist Hito Steyerl also contributes tangentially to this literary field of investigation. Originally trained as a documentary film maker, Steyerl’s artwork and writings, often draw upon story to problematize aerial views in ways accessible to audiences beyond academia. Interested in the invisible articulations of infrastructure that organize the operations and power systems of the world, she aligns herself with Trevor Paglen. Both these artists demonstrate a desire to share their methodologies, which guide others in practices of how to see the world, through a range of interdisciplinary projects and dissemination techniques. Both Steyerl and Paglen have made aerial perspectives a subject of extended exploration, of which select examples will be discussed in the thesis.

Sarah Luria, a cross-disciplinary scholar (literature and environmental studies) supports the need for multiple viewpoints. She argues for more deliberate literature-geography dialogues that

²⁶ Ibid.

would allow collaboration across disciplines that would contribute to the understanding of place and more complex vocabularies through which to describe it. Luria suggests that the point of view from which a story is told, be it first-person, limited third person, or omniscient determines the amount of information revealed in a particular story, and such range of information can be actualized by the angle from which an image is composed. This, she says, “is dramatically illustrated in geography, where the point from which a place is viewed—from the ground or the air, and the infinite numbers of angles within and between those modes—frames the space that is seen.”²⁷ Another argument that I advance is that along with a range of information being held within these infinite angles, so too is there an emotional range, which contributes to the production of place from above.

Landscape has for centuries invited poetic renderings in pictorial or literary form and through this invitation a great canon of metaphors has been developed and applied in efforts of description. In this thesis, I argue that it matters what metaphors are used to make sense of place. Relationships to landscapes vary between cultures and specific sites, and to make meaning of places through references limited to concepts of a Western canon of literature, mythology, and art history is a colonial practice underpinned by a sense of entitlement to place in the sense of its ownership and via its meaning production as well. My goal with the thesis is to reignite an interest in the topic of perspective, that recognizes the interdisciplinarity of such fields as geography and art history but brings the conversation further than the respective fields into a more collective forum. As such, I hope to encourage a way of looking and describing landscapes from above in a manner that references not just the metaphors, but also concrete circumstances. If it can be said that aerial images offer valuable information, then I argue it is the responsibility of art historians,

²⁷ Sarah Luria, “Spatial Literacies: Geotexts,” *GeoHumanities: Art, History, Text at the Edge of Place*, (London and New York: Routledge, 2011), 69.

critics, and curators, to assist in decoding that information. This argument emerges from a tendency I observed during my research, wherein aerial images in art contexts were often accompanied by descriptions that failed to acknowledge the concrete aspects of place and specifics of the activities represented. More problematically, were the instances of aerial perspectives left to operate on their own—a topic that I explore in the thesis.

How the world is looked asserts a positionality and affects relationships between humans and between humans and their environments. My interest in aerial studies emerged out of this concern, as I came to notice a proliferation of aerial photographs accompanying articles on digital news sites, such as the *New York Times*. With greater frequency news stories came to be articulated through the interactive modalities of visual journalism, notably those addressing war or climate change.²⁸ These media platforms invited, if not obliged, viewers to engage with a telescoping view known as the “long-zoom,” which would ostensibly bring them “closer” to the subject.

Evocative of Ray and Charles Eames’s *Powers of Ten* (1977), the designers’ film whose focus begins with a picnic in the park and pulls away to outer space, the long-zoom as used in visual journalism, activates accompanying graphics and pop-up captioning, as the viewer advances from a satellite view to a few metres above the ground. These virtual descents bring with them incremental changes in scale and varying image resolutions, with the latter ultimately corrupting upon “arrival” at the limits of optics. The frequency at which these interactive platforms utilizing this telescoping articulation increased by such a degree that the long-zoom came to be considered

²⁸ According to Astrid Gynnild, visual journalism refers to a variety of storytelling devices across platforms, including, videos, photos, animations, and data visualizations, or it simply refers to the modalities of multimedia storytelling. Adding that, “The conceptual framing of visual journalism has varied throughout media history and has been closely interrelated with technology development.” Astrid Gynnild, “Visual Journalism,” *The International Encyclopedia of Journalism* (Eds.) Tim P. Vos and Folker Hanusch (John Wiley & Sons, 2019).

the “characteristic visual paradigm of our time.”²⁹ Obviously, I was not the only one to notice that aerial views were invading visual culture and were becoming staple perspective to articulate news stories.³⁰

Two visual stories that were instrumental in solidifying my interest in aerial perspectives, are “Greenland is Melting Away” and “Inside Raqqa, the Capital of ISIS,” which were published only a month apart in 2015 in the *New York Times* digital edition.³¹ The latter article offered a visual tour of the northern Syrian city of Raqqa, known since 2013 as the “de facto capital of the Islamic state”; while the former permitted a bird’s-eye view (more accurately a “drone’s-eye”) of the evidence of climate change in the North, and the research efforts dedicated to charting this decline. Both were interactive visual stories, and both used aerial perspectives as the instrumental viewpoint from which the places were viewed; both were accompanied by captions and graphics (including maps) as supports. Placed side-by-side, these articles also established early on in my research the interconnections of climate change and war, which at the time of this writing in 2021 are collapsing into one another with increasing force.

The Raqqa article used the aerial view as the main articulating perspective of an interactive platform that included maps, satellite images and ground-level photography. The telescoping view (from satellite to street level) produced a visual story that struck me as a troubling hybrid application of military surveillance and guided cultural tour. Pictures of the now uninhabited and devastated Syrian city of Raqqa were introduced as a “once bustling city, now transformed under

²⁹ Steven Johnson, “The Long Zoom,” *New York Times.com*, 08 Oct. 2006. Last accessed 03 Oct, 2021. <https://www.nytimes.com/2006/10/08/magazine/08games.html>

³⁰ A boom period in aerial perspective research seemed to occur in between 2011-2013. Preparing my Ph.D. proposal in 2015 meant I was on the outer edge of this saturated period. Indeed, visual stories are now permanent features of major news digital platforms, such as the *New York Times*, the *Guardian* and the *Washington Post*.

³¹ “Inside Raqqa, the capital of ISIS.” *The New York Times.com*. 21 Nov. 2015. Web. 26 Dec. 2015; Davenport, Coral et al. “Greenland is Melting Away.” *New York Times*, 26 Oct. 2015. Web. 27 Oct. 2015.

the (ISIS) group's brutal rule.”³² Current and former residents provided testimony and interpretation of the sites visited on this visual tour, annotating the various images as they came into focus. Traveling through both time and space through interactive cartography accompanied by text, viewers were encouraged to view landscape and the built environment through a sense of absence or vacuity; faced with a representation of the destroyed present, they were prompted to imagine what could only have been a better past. However, immediately noticeable were the failings of the perpendicular aerial view employed in the visual story to convey the emotion that would honour the register of the witness accounts or to support a clearly defined narrative. These views seemed distinctly disembodied and disinterested in the human plight ostensibly being captured. Yet what this visual story about war was capturing was not human carnage, but a salient human absence represented by empty public sites of the city, which would normally be places of community activity.

Meanwhile, the Greenland story described, through pop-up captioning accompanying the visual tour, a significant discovery made during the first-ever mission to comprehensively measure the melting rate in the region (otherwise determined by satellite imagery), which was that the ice surface was actually porous.⁴ The necessity of such narrative accompaniment underscores an argument made by Caren Kaplan, that “in the distancing aesthetics of aerial reconnaissance photography [...] no discernible narrative is established and it is even difficult to tell what it is that we are meant to see.”³³ As Kaplan observes, often viewers of aerial landscapes are uncertain of that they are looking at, or what it is they are *supposed* to be looking at. These are not easy images with information aligned on the horizon line or with a distinctly showcased narrative. These visual

³² “Inside Raqqa, the capital of ISIS.”

³³Caren Kaplan, “The Space of Ambiguity: Sophie Ristelhueber’s Aerial Perspective,” *GeoHumanities: Art, History, Text at the Edge of Place*, (London and New York: Routledge, 2011), 158.

stories set me to thinking more intently about what it was I was looking at in aerial images and they also caused me to consider who was supplying their less-than-obvious meanings.

Theoretical Framework

Foundational to this study is the work of media studies scholar, Lisa Parks. Currently Professor of Comparative Studies at MIT, Parks calls attention to the unequal politics governing the applications of surveillance technology. In *Cultures in Orbit: Satellites and the Televisual*, Parks reveals the geopolitical politics governing satellites and their influence on communication and epistemological networks. *Rethinking Media Coverage: Vertical Mediation and the War on Terror* is an extension of this discussion. Here Parks insists on the urgency of situating the geospatial image within critical dialogues on media and democracy, claiming that this kind of image does not only contribute to shaping “perceptions and worldviews, it is also being used to remodel life on earth.”³⁴ In this thesis, I align myself with Parks in arguing for more critical engagements with geospatial imagery, that go beyond their enigmatic technological appeal to consider the environments in which they operate and contribute to. In short, I view these images in terms of processes and relationships, rather than just as objects.

In *Rethinking Media Coverage*, Parks reveals how powerful aspects of culture are constructed around top-down structures; this theory of vertical ordering provides an important framework to the investigations that unfold in the thesis. Part of my research is dedicated to examining current applications, governing operations, and projected future trends of vision technology. Through this investigation, I map out the multiple ways in which the horizontal and vertical intersect in hierarchal power systems and world ordering. In concert with this, I also

³⁴ Parks, *Rethinking Media Coverage*, 9.

analyze works of art and turn to critical practices of looking at images, such as visual investigations, to reveal what is being done to interrupt these asymmetrical vertical logics. Part of this project involves looking at how the makers, interpreters and institutions of art can either bolster or dismantle vertical power structures.

Also contributing to this vertical discourse is feminist scholar Caren Kaplan, who takes into account the aerial histories that influence contemporary aerial politics and through this, cautions against the perceived neutrality images from above. Referring to aerial reconnaissance photographs she remarks on their contextual flexibility and the power invested in their readings. She writes,

“Although aerial reconnaissance images are believed to be marginal to the interpretive and evaluative practices of both high art and commercial photography, they can be “read” in many ways. Certainly, they can be understood to convey the point of view of air power -- distanced and abstract, on the one hand, and time, as well as site specific, on the other. The interpretation of such images leans one way or the other depending on context of use and, therefore, the meaning can be linked from any intention of the image-maker.”³⁵

Aerial interpretation, and what is at stake in the narratives produced by these readings will receive close attention throughout the thesis. As Kaplan identifies and will be explored throughout the thesis, views from above are assemblages of power operations, capable also of generating “power relations by creating differences through representational practices”:

“These differences – between military and non-military, soldiers and civilians, citizens and non-citizens, those who target and those who are targeted, for example – become operational as culture over time, circulating as ways of seeing, modes of making and reproducing art, industrial design and technologies, composing the ground of everyday life.”³⁶

³⁵ Kaplan, “The Space of Ambiguity,” 158.

³⁶ Caren Kaplan, “The Balloon Prospect, Aerostatic Observation and the Emergence of Militarised Aeromobility,” *From Above: War, Violence, and Verticality*, Eds. Peter Adey, Mark Whitehead, Alison J. Williams (New York: Oxford, 2013) 21-22.

Calling attention to these binary power relations, both Kaplan and Parks see the critique of vertical power as a feminist post-structuralist project. As Parks argues, aerial views provide a source of strategic power, constantly advanced via technology (generally owned by the “top”), which gives visual representation to the world in a way that reflects and perpetuates this tiered organization that establishes a system of “othering.” According to Warf, satellite imagery, for example, is capable of enacting “othering logics” as they are frequently framed “in an understanding that privileges the skilled observer and minimizes the role of people and places being observed.”³⁷

Part of the strategic power to which Parks refers is produced by the visual politics of the aerial image, which offers abstraction, ambiguation, and reduced resolution to the public in comparison to the acuity and precision of optics available to military, government and corporations. Karen T. Litfin supports a feminist programme of interrogating verticality, and maintains that the aerial perspective, especially the distanced superior vantage point achieved through satellite remote sensing “functions simultaneously as symptom, expression and reinforcement of modernity’s dream of knowledge as power.”³⁸ Observing the tendency for satellites to reinforce masculinist and positivist norms through detached observation, Litfin aligns herself with feminist scholar Donna Haraway, who argues against the “all-knowing” omniscience of vertical views in favour of situated knowledges and partial perspectives, instead. These values in turn are foundation to the mandates and methodologies of the interdisciplinary investigative research team of Forensic Architecture, whose practices are invested in both human and non-human forms of testimony, which resist the detached omniscience of state narratives.

³⁷ Warf, “Dethroning the View from Above,”47.

³⁸ Karen T. Litfin, “The Gendered Eye in the Sky: A Feminist Perspective on Earth Observation Satellites,” *Frontiers: A Journal of Women’s Studies* 18(2) (1997),39.

Furthering the aerial discourse in the context of drones, Parks and Kaplan join editorial forces in *Life in the Age of Drone Warfare* (2017), an interdisciplinary collection of essays that interrogates drones according to historical, geopolitical, juridical, and cultural terms. Here Parks and Kaplan call attention to the drone as a contested object, ever-present in mainstream news, yet poorly understood. According to these scholars, such misconceptions are partly driven by media reportage which overlooks “the material ecologies through which drones are operationalized”³⁹; responding to this lack is part of the mandate of the essays published in *Life in the Age of Drone Warfare*, and the same can be said of my thesis.

Also problematic in the mainstream discourse of drones in the West, argues Kaplan in her essay “Drone-o-rama: Troubling the Temporal and Spatial Logics of Distance Warfare,” is the glib distinction that qualifies drones as “new,”⁴⁰ when contemporary versions of military drones have been in service since 2001,⁴¹ while more archaic versions were used in early modern war. Here Kaplan argues that “we question who benefits most – materially and financially as well as metaphorically – from the cultural amnesia propagated by endless narratives that situate drones as something ‘new’ and exceptional.”⁴²

Kaplan argues that the drone must be necessarily understood within an eco-system of bodies and machines, in a way that acknowledges their histories and materialities. As such her research overlaps with that of British-Israeli architect Eyal Weizman. The founder of the Goldsmiths College-affiliated research group, Forensic Architecture (2010), Weizman likewise

³⁹ Lisa Parks and Caren Kaplan (Eds.), *Life in the Age of Drone Warfare*, (Durham and London: Duke University Press, 2017), 2.

⁴⁰ Kaplan, “Drone-o-rama: Troubling the Temporal and Spatial Logics of Distance Warfare” in Lisa Parks and Caren Kaplan (Eds.), *Life in the Age of Drone Warfare*, (Durham and London: Duke University Press, 2017),16.

⁴¹ Chris Woods, “The Story of America’s First Drone Strike,” *The Atlantic*, May 30, 2015.

<https://www.theatlantic.com/international/archive/2015/05/america-first-drone-strike-afghanistan/394463/>

⁴² Kaplan, “Drone-o-rama,”16.

argues for sensitivity towards histories and materialities in investigative approaches to evidence, image and events.

In *Investigative Aesthetics: Conflicts and Commons in the Politics of Truth* (2021), which Weizman recently co-authored with his Goldsmiths colleague Matthew Fuller, the authors discuss the practices of open-source investigations (OSINT), that call upon forensic approaches to image and information, while encouraging collaborative stances to investigation. In such practices, digital architectural applications are often used to “synchronise and recompose shards of evidence,” with these models serving as an “optical and interpretative device” that can be navigated between and compared via a range of perspectives.⁴³ “Investigative aesthetics,” which Fuller and Weizman define as “an investigative interrogation at the intersection of politics and technology” is a mode of practice that depends on perspective:

“Because it starts from an incident, investigative aesthetics is grounded in experience, and the perspective it brings to bear is openly partial, embedded, activist or militant, rather than a “disinterested” or neutral view from nowhere. Making sense must also not mean simple conformity to a culture, especially that of a homogenous mass of variously privileged perspectives which are formed by their perspectival interpretations. Situated experience is varied and subject to different kinds of access, understanding, and interpretation.⁴⁴

The aerial perspective is an instrumental vantage point in such investigations as they offer a contextualizing view, through which relationships between features can be better understood. In Weizman and Fuller’s conception, and in their application in the investigative practices of Forensic Architecture, aerial views are always verified with ground-level knowledge. In doing so they interrupt the status of the neutral view from *nowhere*, insisting that aerial perspectives are always a view of *somewhere*. Furthermore, even if aerial images are taken or aerial violence inflicted from uncertain aerial locations, the machines that take the pictures and drop the bombs can be traced

⁴³ Matthew Fuller and Eyal Weizman, *Investigative Aesthetics*, (London; New York: Verso, 2021).

⁴⁴ *Ibid.*, 14.

back to particular geographies. When, for example, the technologies and machinery of drones are dissected, an atlas emerges of countries, corporations, and people, implicated in the design and by extension the results of the design.⁴⁵

Chapter Summaries

Chapter 1: The Militarization of the Aerial Perspective

This thesis is organized into four chapters, each of which is positioned around select case studies formed of politicized visual culture or works of art. Chapter 1 looks at the militarization of aerial views, which have come to epitomize the linkage between sight and control, vision and violence since First World War, when aerial technology was greatly advanced (although aerial technologies and their associated views predated this period, with aerial views having figured in art history prior to the ability for humans to be airborne).

Attentive to these aerial histories, I begin the chapter with an analysis of Colin Powell's infamous presentation of satellite images at the U.N. Security Council in 2003—images which purportedly showed that Iraq possessed weapons of mass destruction. Presenting them to the council via a PowerPoint in a meeting that was internationally televised, Powell used these images to support a bid for an American-led invasion of Iraq. I look at these satellite images not only to interrogate their documentary status and their precarious linkage to truth, but also with an interest in the circumstances and mechanics of their presentation, both of which I offer, are partially articulated by a targeting function. Powell used the nebulously described architectures pictured in the images as signposts to drive a narrative that was largely produced from what could not be seen, which amplified the suspicion through which American audiences were encouraged to view Iraq.

⁴⁵ See for example Forensic Architecture's investigation, "Triple Chaser" (2019), in which the research group traced the linkage between the tear gas trade and Warren B. Kander, the vice chair of the board of trustees of the Whitney Museum of American Art. <https://forensic-architecture.org/investigation/triple-chaser>

Drawing attention to the architectures, which in some cases were framed to approximate a bull's eye pattern, he led an anxious American audience to believe in a physical space in which the War on Terror could unfold. He filled in the blanks of the story. While the U.N. Council was not convinced by Powell's argument or his evidence, his pitch to the American public was persuasive. The satellite images, advanced as objective truth, were instrumental to the garnering of public support for the invasion of Iraq.

In analysing these images, I am attentive to the moment of their presentation, subsequent to the September 11th attacks of the World Trade in 2001, and at a moment when digital culture was burgeoning. At this time, the technology Powell used was promoted and readily accepted as objective and neutral, replete with the promise of efficiency. Meanwhile the "war on terror," born out of 9/11, and conceptualized by the Bush government as a nebulous and ever-present threat sent the message that aerial technologies were fundamental to national security. On September 11, 2001, a distinct aerial imagination was forged: air travel became fraught, satellites became essential to survey for constant threat, while military drones were advanced as essential means of counter-offensive. This paradigm helped to establish an "us" and "them" mentality defined by which parts of the world possessed aerial technologies and which would be made a target of them. The "everywhere" threat of the war on terror created the anxious American environment into which Google Maps and Google Earth were launched in 2005, applications that introduced aerial views into mainstream digital culture. Powell's presentation in 2003 only slightly preceded its introduction, meaning that the satellite images were presented to a public whose aerial anxiety was high and aerial literacy was relatively low. Media scholars Caren Kaplan and Lisa Parks argue that such sensing technologies have helped to normalize a targeted view in visual culture, which has

encouraged what they call “the militarization of daily life.”⁴⁶ Further supporting this claim is Derek Gregory’s observation that many of today’s ubiquitous technologies operate or are organized around scopic regimes, which he sees as a “visual apprehension” that is invading culture more generally. The “scopic regime” has been defined as “an ensemble of practices and discourse that establish truth claims, typicality, and credibility of visual acts and objects and politically correct modes of seeing.”⁴⁷

Using Powell’s satellite images and the manner of their presentation, I reveal how targeting logics or “scopic regimes” have come to inform the reading of aerial imagery, in sometimes subtle ways, and in contexts that extend past the military. Innovations in sensing technologies and the visioning that they make possible have changed how various battles (military, culture, corporate) are waged; transforming bodies into targets in both private and public spheres, life and the living become increasingly militarized. These paradigms are reshaping relationships between people and environments and reasserting unequal laws of vision. To interrogate such asymmetries, I analyze select examples of landscape imagery from the Western art historical tradition, arguing that a targeting function has long been pervasive in the history of art. Furthermore, I offer that these targeting functions are articulated and activated in pictures through the intersections of horizontal and vertical registers. These registers have been foundational to the organization of space since the Renaissance invention of linear perspective, a system of optics itself informed by a scopic regime.

To elucidate the legacy of targeting aesthetics created by the intersections of the vertical and horizontal, I perform comparative analyses of landscape paintings by early Netherlandish painter, Joachim Patinir; Nicholas Poussin, a leader of the classical French Baroque style; and the

⁴⁶ Kaplan and Parks, *Life in the Age of Drone Warfare*.

⁴⁷ Allen Feldman, ‘Violence and Vision: The Prosthetics and Aesthetics of Terror,’ *Public Culture*, (10 (1), 1997), 30.

German Romantic, Caspar David Friedrich. Referring to W.J.T. Mitchell who approaches landscape as the “dreamwork of ideology” laden with imperialism,⁴⁸ I ask how each how the each of these paintings, in their respective manner, functions ideologically as an expression of power.

Chapter 2: Visibility and invisibility

In Chapter 2, notions of visibility and invisibility are fundamental to my exploration of the potential of aerial perspectives to produce counter-narratives. Using as a preliminary case study, the chemical bomb attack that took place in Douma Syria on April 7, 2018, I examine collaborative visual-investigative practices and open-source investigations (OSINT) by research groups Forensic Architecture, Bellingcat and the New York Times Visual Investigations Team. These organizations provide modes of resistance against state-driven narratives. These practices are contributing to a new and significant spectrum of images in contemporary visual culture, while offering agency and possible means of recourse to ground-level actors. This investigation will use as its theoretical lens, Michel Foucault’s “micro-physics of power,” a techno-social construct that describes the “strategies, tactics, techniques and concrete functionings of power.”⁴⁹ I apply this thinking to consider how within the material traces produced during the bombing of Douma were accumulations of micro-physics of power made identifiable through visual investigations.

Following Nicholas Mirzoeff’s claim that visual culture is comprised of things seen and not seen, this chapter is ever attentive to the registers of visibility and invisibility. Drawing extensively upon the scholarship of Eyal Weizman, I consider aspects of invisibility/visibility, especially as they relate to aerial photographs. At the fundamental level, what is lost in the aerial perspective is detail, which has been sacrificed for expansive survey (or “coverage,” as it is

⁴⁸ Mitchell, *Landscape and Power*,7.

⁴⁹ Michel Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Vintage, 2nd Ed.),26.

referred to by Lisa Parks). Since it is in the agglomeration of details where statements of fact can be achieved, Weizman argues that aerial images must be verified at ground level.

Weizman’s “threshold of detectability” is a key term in this chapter. His mandate is to “examine the conditions of structural inequality in terms of in access to vision, signals and knowledge,”⁵⁰ and likewise, I use this chapter to investigate such conditions of structural inequality. Weizman states that the ability to operate under the threshold of detectability is itself a modality of mobility invested with power. In order to illustrate these functionings of power that deploy invisibilization to strategic ends, I examine the role played by media and technology, the politics of resolution, and geopolitics as they contribute to the threshold of detectability.

Aerial perspectives figure prominently in the forensic (or what Weizman terms “counter-forensic) practices of visual investigation teams featured in this chapter. Referring to the case study of Douma, I explore how OSINT and interdisciplinary visual investigations are re-distributing the power of aerial views. This redistribution of power is achieved through collaborative investigations of teams whose mandate is to form solid cases of evidence, while also equipping citizens with the knowledge that gives agency to ground-level activists. This knowledge and a collaborative spirit invite digital citizens to participate in the countering of, for example, state-driven narratives of violence (often delivered by aerial means).⁵¹

I use a secondary case study—a mapping project called *Conflict Urbanism: Aleppo* (2015), by professor of architecture, Laura Kurgan. This two-stage collaborative project, which includes an open-source, layered map of Aleppo as well as a platform for storytelling using data, invites viewers to interact with stories and space through aerial views. I argue that Kurgan’s work,

⁵⁰ Weizman, *Forensic Architecture*, 30.

⁵¹ Forensic Architecture works exclusively in contest of state-run narratives and describes their investigative approach as “counter-forensics.”

alongside the practices of the visual investigations teams studied here, give examples of a collaborative quality of visual investigations that are contributing to visual culture in new and important ways. Fundamental to their significance is an approach to aerial views which depends on ground-level verification, thereby refusing the sole proprietorship of the view from above by state and corporate power. Redistributing this power to individuals and activists, they make these perspectives accessible to citizens and activists. As such, they reaffirm the salience of aerial perspectives in visual culture, and highlight their significance as viewpoints that act as a nexus between evidence and art.⁵²

Chapter 3: Aerial Angles

Using “abstraction” as the keyword for the third chapter, I first examine the photographic series *Fait* (1992) by French photographer Sophie Ristelhueber, and then select works featuring aerial views by American artist Trevor Paglen. Each artist takes a vastly different approach to the notion of abstraction: in *Fait*, a series of chromogenic aerial photos of the Kuwaiti desert taken shortly following the end of the Persian Gulf War, Ristelhueber insists that the view from above offers a very limited understanding of war. In various ways, *Fait* asserts that abstraction and ambiguation are qualities fundamental to images featuring aerial views. Meanwhile, Paglen argues that these qualities are sometimes tactical, rather than inherent characteristics of aerial images, and that even within the act of ambiguation is a set of information that can speak to systems of power.

The analysis in this chapter is founded on the argument that aerial perspectives cannot be essentialized and singularly conceptualized – there is no one aerial perspective, but rather a range of them, each holding their own index of information. Perpendicular perspectives featured in satellite images are considered by laypersons as the most abstracted images of landscape, as the

world below becomes rendered into shape and pattern, light and shadow. These effects are largely brought on through the distancing effect of the views and the lack of horizon line, which, since the Renaissance, has served as an anchor point in the organization of space. Meanwhile, oblique views such as those produced by drones or airplanes tend to retain some aspect of the horizon line and a referencing of scale achieved through the comparison of identifiable features such as buildings whose facades remain at least partially visible.

It is also relevant that both Ristelhueber and Paglen have pictured desert landscapes: in *Fait* it is a Middle Eastern desert, whereas in Paglen's *Limit Telephotography* series, it is the desert of the American Southwest. In analyzing *Fait*, I link Ristelhueber's programme of ambiguation to nineteenth-century Orientalism, a period in which European artists traveled to North Africa and gave representation to the region through a preconceived visual mandate. I turn to art historians Linda Nochlin and John Zarobell to reveal Orientalist attitudes that viewed the East as exotic, decrepit, and ahistorical. I also compare Ristelhueber's work to paintings by nineteenth-century Orientalists such as, Augustus Osborne Lamplough (1877) and Gustave Guillaumet (1840).

This art historical analysis is followed by a section dedicated to drone discourse, as I interrogate drones as an aerial modality that depends on a notion of ambiguation situated in its politics, applications, and operations. Here I draw from the work of Derek Gregory and Frédéric Mégret, who discuss how drones are capable of inciting geographical alterations. Gregory describes how the politics of drone warfare that operate around the targeting of moving bodies, permit drones exceptional transnational passage and transform border regions into "lawless" territories. Meanwhile, Mégret argues that drones are effectuating the vanishing of battlefields, as the targeted strikes of drones of remote warfare that are increasingly occurring in urban environments are replacing trenches, fields, and "boots on the ground."

Following this discussion, I end the chapter with an extensive analysis of works by Trevor Paglen which interrogate drones and aerial perspectives. Paglen says that one must work hard to see the contemporary world, which is largely articulated by invisible infrastructure. Furthermore, he insists that technology is not neutral or objective, nor are the perspectives generated or amplified by these technologies. In Paglen's work an attitude towards landscape distinct from Ristelhueber emerges, as he is attentive to how histories of landscapes and histories of visioning technologies intersect—relationships not acknowledged in *Fait*. Paglen experiments with the strategy of pushing the limits of seeing so that images begin to corrupt as optics interact with atmosphere. *Limit Telephotography* (2006-2012), in which he used high-powered lenses to photograph desert landscapes, exemplifies this optical experiment. Comparing these artworks, I argue that rather than understanding ambiguity as a passive quality, we can approach it in an active sense, seeing it as a set of processes, with intents and results, offering new information that speaks to power.

Chapter Four: Ground-level Truths

In the fourth and final chapter, the thesis explicitly situates itself at ground level. I investigate the relationship between aerial perspectives and oral history, and in doing so contribute scholarship to a yet relatively unexplored intersection between these two fields. Here I use artworks by two separate artists as case studies. The first is *Desert Bloom* (2011-2013) by Fazal Sheikh, an image-and-text work featuring aerial photographs of the Negev desert, while the second is a film by Stephanie Comilang titled *Come to Me, Paradise* (2016). Both artworks put aerial perspectives into conversation with ground-level testimony to question notions of home and displacement. Subverting more official relationships with aerial imagery, which are often interpreted through an omniscient voice, both Sheikh and Comilang give narrative agency to ground-level individuals who have a direct relationship to the landscapes represented in the works.

In the case of *Desert Bloom*, the questioning takes place in the contested landscape of the Negev desert, where since 1948, Bedouin tribes have been repeatedly and forcibly displaced by Israel; while Comilang's film, a hybrid documentary/fiction work, takes place in Hong Kong and focuses on the experience of Filipina domestic workers in that city. Sheikh's photographs of the Negev are supported by captioning whose information is partially provided by the forcibly displaced Bedouins, while the narrative in Comilang's film is driven by intimate vignettes of a group of domestic workers that highlight their compromised approximation of "homelife." Drawing predominantly from the scholarship of oral historians Steven High, Alexander Freund and Alistair Thomson, I explore embodied experiences of place in relationship to aerial perspectives. Through this investigation, I address the potential of oral narratives to contribute to a deeper understanding of aerial imagery. I propose that the relationship between aerial photography and oral history is a reflexive one, in that these images can help elicit memory of those who come into contact with them, while testimony can contribute new and profound meaning to the photographs.

In this chapter I also turn to the geographer Doreen Massey, whose conception of place as an envelope of time and space offers a particularly useful lens for viewing *Desert Bloom*. Through giving representation to the stains, shapes and lines that mark the desert in aerial images, and referencing them with ground-level knowledge, *Desert Bloom* pictures both the physical and temporal space occupied by Bedouins and other Palestinians. Ruin, ruination, and displacement are topics explored here in the context of the Negev.

I then undertake a feminist reading of Stephanie Comilang's *Come to Me, Paradise*. Donna Haraway, who critiques the "master view" of the aerial view, which she terms the "god-trick" provides an important framework when considering Comilang's work. "Positioning," says

Haraway, “is the key practice grounding knowledge organized around the imagery of vision, as so much Western scientific and philosophic discourse is organized. Positioning implies responsibility for our enabling practices.”⁵³ This chapter argues, alongside Haraway, for situated knowledges, in order to explore how technologies and bodies might collaborate, to produce perspectives under more equal and life-honoring terms. It is a similar spirit that I identify in *Come to Me, Paradise*.

With this in mind, I argue for the significance of Comilang’s use of a female voice to represent the narrator-drone in the film. Rather than leveraging an exploitive lens (as technology so often does), *Paradise*, the drone, offers empathy and guardianship to the women in Hong Kong. Here I join voice with scholars Anna Feigenbaum and Oliva Khoo for whom “drone feminisms,” must in the words of Haraway involve “both building and destroying machines, identities, categories, relationships, space stories.”⁵⁴

The Future of the Aerial View

In choosing aerial perspectives as a subject of research, I have the impression that this topic will continue to be a work in progress. After all, “progress” is a term that has long been synonymous with aerial technologies, imagined as they are as future-facing machines that will deliver ever-impressive views and afford mobility to destinations presently unimaginable. As suggested by current space explorations that have seen a sensing rover land on Mars, not to mention, the recreational space flights of a handful of billionaires, and as long advanced by sci-fi writers, the future seems to be positioned aurally. And yet within new advancements in aerial technology, are both a promise of benefit and a spectre of harm.

My goal with this project to offer ways of looking at the world from above in a way that does not polarize human and machine vision. A question that troubles me as I finish this research

⁵³ Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991)193.

⁵⁴ *Ibid.*,181.

project in 2021 is whether or not digital citizens now possess a more sophisticated aerial vocabulary than they did say in 2003, the year that marks the first case study in thesis, when Colin Powell presented the satellite images to the U.N. It has been nearly two decades since GPS and Google Earth emerged, and they have become ubiquitous way-finding staples, while digital visual culture is replete with aerial images. And yet, can it be said that they are offering new knowledge, or if they are, is it being accepted, refused, or manipulated? As Lisa Parks has remarked, horizontal and vertical techno-cultural registers intersect; sometimes they collide.⁵⁵ Certainly, contemporary citizens have more vertical exposure through image and experience than ever before, however, they also must contend with the accelerated horizontal and rhizomatic articulations of the internet that can enable decontextualization and the production of mis- and disinformation. In a more positive sense, aerial images can at times have the ability to slow down the act of looking, allowing the viewer to ask questions, to admit to lacunae in knowledge. In this thesis, the research performed in slow deliberate contemplation. This approach pays respect to what I believe aerial images ask of me, which is to see the world for what it is, something never still, always transforming, in acts of destruction and in building; its parts and processes escaping the names given to them as they become something else.

My scholarship sets out to extend the idea that perspective is as vital to the formation of worldviews, as it is to the understanding of events that take place at the scale of the macroscopic. It matters how things and people in the world are looked at, from what angle environments and architectures are viewed. I also want to encourage a reconsideration of what landscape is, in agreement with Mitchell that landscape can become “a medium of exchange between the human and the natural, the self and the other.”⁵⁶ Aerial views offer an opportunity to witness the evidence

⁵⁵ Parks, *Vertical Mediation*, 7.

⁵⁶ Mitchell, *Landscape and Power*, 5.

of these exchanges, and in doing so urge a reconsideration of the term “natural.” Here I align myself with Lisa Parks who insists that there is nothing “natural” about top-down power. Aerial perspectives, as much as they can assert this vertical dominance, also provide the opportunity to contemplate and potentially dismantle these orderings.

Chapter 1: The Militarization of the Aerial Perspective

On February 15, 2003, Colin Powell, then Secretary of State for the United States of America, stood before the United Nations security council to make the case for war against Iraq. Underlying his urgency was the conviction that Iraq possessed weapons of mass destruction, a claim that he would attempt to give substance to through a lengthy speech delivered with oratorical flair. Instrumental to his argument were a series of annotated satellite images that purportedly revealed the superficial traces of an extensive clandestine network of chemical weapon production and distribution, intended for an attack on U.S. soil.

The satellite photographs were part of a broader catalogue of documentary material displayed in a now-famous PowerPoint presentation that included photographic portraits, illustrations made from memory, and translated transcripts of intercepted phone conversations as supports to audio tapes. The sentiment that underpinned and intensified Powell's urging of pre-emptive action by the US was that Iraq was engaged in an extensive surreptitious operation to produce weapons of mass destruction. This spirit of suspicion was reinforced by the repetition of the words "deception and denial," which held banner positions throughout the visual presentation. These keywords amplified the mistrust under which the country of Iraq should be viewed, while priming the viewers' interpretation of the images.

As the UN hearing was an internationally televised event, these inflammatory keywords reached a wide audience, most of whom would have had relatively little exposure to geospatial images. The lack of public knowledge around satellite images was further leveraged towards

amplifying a sense of suspicion towards their content through Powell's insistence that the images were beyond the layperson's grasp:

Let me say a word about satellite images before I show a couple. The photos that I am about to show you are sometimes hard for the average person to interpret, hard for me. The painstaking work of photo analysis takes experts with years and years of experience, poring for hours and hours over light tables. But as I show you these images, I will try to capture and explain what they mean, what they indicate to our imagery specialists.⁵⁷

Powell's preamble to the presentation of the satellite images before the U.N. council describes the phenomenon that makes geospatial imagery (and more generally aerial photography), efficacious as documents of evidence. In their aesthetic novelty which lacked a public vernacular to describe them, aerial imagery become open to the stakeholder who owns or has access to the technologies that produce them and who consequently assume a sense of authorship over their meaning production. Powell's presentation, which was delivered subsequent to then-President Bush's decision in favour of a US-led invasion in Iraq, had little strategic value. Rather it was a media event intended to rally public support through stoking the embers of an anxious collective American consciousness following the downing of the World Trade Centre on Sept. 11, 2001, which marked the entrance point to America's nebulous and never-ending "war on terror." Notably, images were foundational to rousing support for a U.S.-led invasion of Iraq and would continue to be used as mediated munitions until US troops departed Iraq in December 2011.⁵⁸

During the presentation, the satellite images served as simplified maps or landscape images, whose highlighted, annotated elements acted as narrative signposts that would describe a

⁵⁷ "Full Text of Colin Powell's Speech," *The Guardian*, Feb. 5, 2003.
<https://www.theguardian.com/world/2003/feb/05/iraq.usa>

⁵⁸ During the nearly nine-year military mission, over one million airmen, soldiers, sailors, and Marines served in the Iraq. The cost of the war: \$800 billion from the U.S. Treasury. A conservative estimate of the human death toll for the period counts 4,500 Americans and more 100,000 Iraqis killed. "The Iraq War: 2003-2011," Council on Foreign Relations, <https://www.cfr.org/timeline/iraq-war>

strategic path to military victory in a foreign land. Understood as technical images, their perceived empiricism leveraged landscape as a medium of communication between the human and non-human.⁵⁹ Landscape is socially encoded by semiotic features that participate in the production of imperialist narrative as it is revealed as a space inviting expansion or invasion in the name of “culture” and “civilization.”⁶⁰ Powell activated such meanings held within the satellite images as landscape, by guiding the viewers’ attention to the annotations inscribed upon the images, leading them through a narrative via an exercise of what James Scott calls “seeing like a state.”⁶¹ This mode of seeing simplifies reality by reducing the field of vision, making whatever phenomenon at its center “more legible and hence more susceptible to careful measurement and calculation.”⁶² “State seeing” then produces a selective reality formed of an aggregate and synoptic view that emphasizes schematic knowledge, control and manipulation” over complex, situated knowledges.⁶³

The photos ultimately were documents representing (if not producing) deceit as the C.I.A. concluded in 2012 that Saddam Hussein did not possess weapons of mass destruction. There were no mobile laboratories producing anthrax and botulism, as Powell claimed. Also false were claims that Hussein had attempted to buy mass quantities of uranium from Africa, as Bush had accused in his 2003 State of the Union address. In sum, a decade of war was based “on things that had never taken place,” and whose effects are still felt today both in Iraq and abroad.⁶⁴

⁵⁹ Mitchell, *Landscape and Power*, 15.

⁶⁰ Ibid.

⁶¹ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, CT: Yale University Press, 1998), 11.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Emily DePrang, “Baghdad Bob and His Ridiculous True Predictions,” *The Atlantic*, March 31, 2013. <https://www.theatlantic.com/international/archive/2013/03/baghdad-bob-and-his-ridiculous-true-predictions/274241/>

In this chapter, I use this set of images and the circumstances of their public presentation to investigate the militarization of the aerial view, a perspective that since the First World War, when aerial photography became industrialized, has come to epitomize the linkage between sight and control, vision, and violence. Drawing from a deeper historical analysis, I will consider how the Western landscape tradition, as pictorial expressions of imperial power, has contributed to the manner in which these images normalize the targeted view and encourage a militarized perspective. This investigation will necessarily question how geospatial images and other aerial imagery are positioned within the Western art historical landscape tradition, while revealing what is at stake when a militarized view is extended to other aspects of contemporary visual culture.

Image and Text: Annotating Targets

It is widely recognized that contemporary culture is highly visual, with people in the developed part of the world, encountering an incredible volume of images in still or moving form. Digital marketing experts estimate that in 2017, American citizens encountered between 4,000-10,000 ads per day, most of which had images attached them.⁶⁵ This number does not include images seen on social media sites, which five years later, has become an even more robust image landscape. This proliferation of images has been made possible through new technologies, which have also enabled and eventually normalized novel viewpoints. The aerial perspective is one such viewpoint that has been advanced by technological developments of the twentieth and twenty-first century, and is now considered the dominant paradigm through which landscapes are represented. However, mediatized images are rarely experienced without descriptive textual support, and aerial

⁶⁵ Jon Simpson, "Find Branding Success in the Digital World," *Forbes*, Aug. 25, 2017
<https://www.forbes.com/sites/forbesagencycouncil/2017/08/25/finding-brand-success-in-the-digital-world/?sh=1cd72b5d626e>

photographs have shown themselves to be particularly dependant on captioning or annotation due to the novelty of their views and the fact that a visual vernacular has yet to be widely established.

Through the abstracted and “nested” effect produced by aerial angles, particularly that of the perpendicular view, aerial imagery becomes open to “specialized” interpretations. As such, a reflexive epistemological co-dependency is established, wherein textual captions describe an image and/or an image supports the descriptive captioning. Twenty-first-century aerial photographs are at times presented devoid of any significant text, which further affirms their abstraction. While at others, over-zealous captioning provides instances wherein Walter Benjamin’s prediction that the caption will “become the most important part of the shot,” has been realized.⁶⁶ This chapter is constructed around a notorious example: Colin Powell’s presentation at a February 5, 2003, U.N. hearing in the form of heavily annotated aerial photos which purportedly showed a weapons of mass destruction site in Iraq.

Text, in the form of captions, annotations and titles played a commanding role in Powell’s presentation, with the title leading into the presentation reading in bright yellow font “IRAQ: FAILING TO DISARM,” followed by the date (Fig.1). A modified version of the title slide, which saw the date replaced by “DECEIT AND DECEPTION” reappeared throughout the presentation, serving as placeholders between the content slides. The repetition of these keywords primed the audience to approach the material with a sense of suspicion, which was framed as a patriotic sentiment. Suspicion was the gateway to security and a pre-emptive attack on Iraq was its actuation. One of the slides shown, labelled “Sanitation of Ammunitions Depot at Taji Iraq” (Fig.2), showcased an awkward diptych of black-and-white photographs, assumedly of the same

⁶⁶ Walter Benjamin, “A Short History of Photography,” *Screen*, Vol. 13 Issue 1, Spring 1972): 25.

site taken two months apart. The image on the right shows a large flat roof building (labelled: “chemical munitions bunker”) encircled by what appears to be a well-travelled dirt road; a vehicle (“decontamination vehicle”) and another object (“security”) are positioned at the upper right-hand corner of the building.

The large bright yellow rectangular annotations were the most salient features of the satellite photographs, and the bold insistence of their presence ensured that certain information was lost at the level of the photograph. The text within these solid boxes named features along general terms, which rather than concretizing the visual information, further emphasized the abstraction of the grainy details revealed in the image. A “decontamination vehicle” as a quotidian anomaly to a general viewing public, was as easily imagined as “security,” a conception whose manifestation was given no physical attributes at all. The level of the description gave just enough details to activate an anxious public imaginary, as they provided sketches of those vaguely materialized machines and infrastructures of the war on terror. The paucity of detail and supported the overall conceptualization of the war on terror, whose greatest threat was located in its nebulousness.

Powell presented these photographs in an urgent bid for the U.S. to engage in war with Iraq. An on-site inspection on March 19, 2003, proved that the “decontamination vehicle” was actually a water truck; later that day coalition forces bombed Baghdad. The example proves the power of the aerial image (one with little relation to the ground truth), which in this case was enough to “start” a war.⁶⁷ The potency of these images is achieved both through the assumed

⁶⁷ The decision to invade Iraq had already been made by George Bush by the time that Powell gave his UN presentation. However, the presentation participates in the popular version of the pre-history to the U.S.-led invasion of Iraq, in that it was publicly understood that the satellite images served as the evidential impetus of the invasion of Iraq. Thus, a participatory aspect was introduced to the event, as though the international viewing public was judging (and purportedly) approving the credibility of the images as proof that Iraq possessed weapons of mass destruction.

authority of the “narrator” or “author” (i.e. Colin Powell, then the U.S. Secretary of State), and through its heavy dependence on the text, which if read according to Roland Barthes’ theory on the text and image relationship, “replies -- in a more or less direct, more or less partial manner—to the question: *what is it?*”⁶⁸ In this case, members of the U.N. and the viewing public were to understand “it” (the photo’s subject) as a chemical munitions bunker, and “it” the photo itself as evidence of threat and justification for military action against Iraq, even though their sources and the information accompanying them were only generally attributed to being “solid,” with no specifics released.

The dilemma in the use of images in the presentation, as described by Laura Kurgan, was not that these “artfully interpreted” images were “fake or forged or distorted the truth,” it is that “they were not objective photographs but presented as such. They were interpretations presented as facts in a way that prevented anyone else from examining the uninterpreted data.”⁶⁹ Indeed, the term “facts” received more conceptual than empirical emphasis, as Powell constantly referred to them by way of adjectives such as “solid” and “reliable,” rather than unpacking them with concrete details. Over the course of the presentation, the terms “facts” and “sources” appeared to be used interchangeably, and both were nebulously defined, making the task of corroborating their truthfulness near impossible. Facts, understood as traces of reality are often referred to as “data,” and considered as empirical evidence. Challenging this empirical status, Kurgan offers that “all data [...] are not empirical, not irreducible facts about the world, but exist as not quite or almost, alongside the world: they are para-empirical.”⁷⁰ To put it another way, she says, “there is no such

⁶⁸ Roland Barthes, *Image, Music, Text*, (London: Fontana Press, 1977), 39.

⁶⁹ Laura Kurgan, *Close Up at a Distance, Close Up at a Distance* (New York: Zone Books, 2013), 25.

⁷⁰ *Ibid*, 35.

thing as raw data. Data are always translated such that they might be presented. The images, lists, graphs, and maps that represent those data are all interpretations.”⁷¹

Photographs then do not represent the totality of meaning, but rather they are the imaging of the possibility of meaning. This meaning depends on what Barthes calls the “reality effect” — “the belief that a photograph is a window onto a self-evident, empirical world.”⁷² Part of the productive power of images is located in their relationship with text, or what Roland Barthes terms “anchorage.” According to Barthes, anchorage can be ideological in its principal function: “the text directs the reader through the signifieds of the image, causing him to avoid some and receive others; by means of an often subtle dispatching, it remote-controls him towards a meaning chosen in advance.”⁷³ When the images used in the U.N. presentation were shown as evidence of Iraq’s possession of weapons of mass destruction, it is clear that their meaning was chosen in advance and that the annotations were used as signposts to “dispatch” the viewers’ reading of image in not so subtle ways and to promote a predetermined narrative by the owners and makers of the images. As such the U.S. government takes authorship of the photos and in its utilization of text to elucidate what is to be seen, exercises (and abuses) what Barthes identifies as

...the creator’s (and hence society’s) right of inspection over the image; anchorage is a control, bearing a responsibility -- in the face of the projective power of pictures -- for the use of the message. With respect to the liberty of the signifieds of the image, the text has thus a repressive value and we can see that it is at this level that the morality and ideology of a society are above all invested. ⁷⁴

When Powell presented these images to the U.N. Council, he emphasized the difficulty of their reading and the necessity for “expert” eyes, and in doing so accentuated their “repressive

⁷¹ Ibid.

⁷² Jim Ketchum, “The Art of Critical Geography,” in *Geohumanities* (New York: Routledge, 2011), 179.

⁷³ Barthes, *Image, Music, Text*, 40.

⁷⁴ Barthes, *Image, Music, Text*, 40.

value” by suggesting only one reading was possible —that is, the “expert” one presented that day. In stressing the images’ need for expert interpretation, says Nicholas Mirzoeff, Powell distinguished “ordinary seeing from specialized visualizing,”⁷⁵ the latter being a technique that “uses airborne technology to depict the world as a space for war.”⁷⁶ In insisting on the difficulty of such images and positioning them beyond the kind of seeing performed by “ordinary people,” Powell makes his case for the necessity of textual authoritative narrative.

Problematic in this dependency is that such textual supports are not static entities and are therefore open to shifting narratives that make the concepts of “truth” and “reality” equally fluid. This infects the notion of evidence with a kind of flexibility so that the same image, in its openness to accommodating a variety of interpretations can be used to prove contrary points. In the case of Powell’s presentation, artist and theorist Hito Steyerl argues that in adding the annotated information later, and by not revealing its source, interpretation and information become confused, with both levels operating at the same time. The information held in the images, she says, has its credibility conferred, delivered as it is with the “aura of the photographic document, which historically is supposed to have a relationality to the object it portrays”⁷⁷ “This claim,” Steyerl continues, “rests on the belief that photographic pictures do have a relation to the object they are portraying,[that] they do retain some information about material reality, and, of course, very often they do.”⁷⁸ However, these relations become increasingly strained in a thriving digital arena of disinformation, where false linkages between pictures and the things they portray are open to

⁷⁵ Mirzoeff, *How to See the World*, 93.

⁷⁶ *Ibid.*, 19.

⁷⁷ Hito Steyerl, “On Documenting: Truth and Politics,” Lecture as part of the undercurrents, a series of weekly lectures and conversations within the Concerning War project at BAK, Dec. 5, 2005. <https://www.youtube.com/watch?v=GKTjTulfpW8>

⁷⁸ Steyerl, “On Documenting.”

media manipulation, where manufactured lies in the form of deep or shallow fakes further destabilizing society's trust in what is seen or heard.

The Network and Nexus of Vertical and Horizontal Systems

The networked articulations of communications systems intersect on horizontal and vertical axes at atmospheric and infrastructure levels. Satellites, for example, are travelling orbital nexus points that receive and redistribute signals across and beyond the terrestrial sovereign borders. These intersections of signals articulate the mobilization of a global economy while reconceptualizing space invested in a security paradigm at the service of protecting a newly energetic and hyper-connected world. Such networks formed of multiple large and small-scale intersections of vertical and horizontal technologies provide the infrastructure that defines the hyper-connected globalized world. The internet provides a ubiquitous example of horizontal technologies, which is articulated by a lateral circulation of images and information. While vertical technologies can be conceptualized as those operating from aerial perspectives and whose operating and governing systems as well are invested with “vertical concepts of hierarchization or stratification.”⁷⁹

Satellites are one example of vertical technologies. Satellites are vertically ordered by virtue of their orbital operational environment, and for their status as an object owned and operated by agencies of significant economic, military, or political power (sometimes all three). Satellites are vertically placed in relation to the Earth's surface, but their functions are activated through a matrix of horizontal and vertical frequencies.⁸⁰ Meanwhile, the internet understood as a rhizomatic

⁷⁹ Parks, *Vertical Mediation*, 4.

⁸⁰ The operational articulations of the satellite signalling are also described according to terms of horizontal polarization and downlink frequency. For example, “in the US, NASA Television's Public and Media channels are MPEG-2 digital C-band signals carried by QPSK/DVB-S modulation on satellite AMC-3, transponder 15C, at 87 degrees west longitude. Downlink frequency is 4000 MHz, horizontal polarization, with a data rate of 38.86 Mhz, symbol rate of 28.1115 Ms/s, and 3/4 FEC. A Digital Video Broadcast (DVB) compliant Integrated Receiver Decoder

instrument of dissemination, retains, if not leverages, a stratified logic in its ordering of knowledge that artificially attributes credibility to the top “hits” generated by a keyword search. Often top positions in internet searches are purchased and then algorithmically cemented through users’ repeated interactions with them, which opens epistemological ordering to corporate control. It is important to note that neither satellites nor the internet operates exclusively according to vertical or horizontal principles, and indeed the network of these interactions is necessary to the function of most any technology. Furthermore, as argues Lisa Parks, such intersections go past operational functions of technology and contribute to both the conception and articulation of various forms of power:

Vertical concepts of hierarchization and stratification continue to govern the ways people imagine and exercise power, even as technophiles celebrate a horizontal and rhizomatic Internet and its supposedly radical and revolutionary potentials to transform top-down political, economic, and cultural relations. If anything, the potential for anyone, including “terrorists” to horizontally access the Internet seems to have become a rationale for intensifying and extending vertical forms of strategic power.⁸¹

Indeed, the internet was presented as a tool of democratization which would encourage a global forum and give voice to the marginalized. This promise failed to manifest and in reality, instead the internet seems to have fomented unprecedented levels of polarization along political and ideological lines. Satellites too have been influential to world order, as Parks and James Schwoch maintain, “Since their emergence in the late 1950s [...] satellites have been fundamental to contemporary conceptualizations of the global and to processes of globalization.”⁸² In addition to influencing reconceptualization of economic and culture spaces, satellites, according to Barney Warf, were instrumental in the militarization of space during the Cold War. They also contributed

(IRD) is needed for reception.” Godard Space Flight Center,” *NASA*, accessed August 26, 2012.
<https://www.nasa.gov/centers/goddard/news/releases/2011/11-027.html>

⁸¹ Parks, *Rethinking Media Coverage*, 4.

⁸² Lisa Parks and James Schwoch, “Introduction,” in *Down to Earth* (New York: Rutgers University Press, 2012), 3.

to the formation of a “modernist regime of vision” described by “a discursive scripting of geographic space, its ideological construction within hegemonic modes of understanding shared by politicians, military planners and the media.”⁸³

Although these orbital machines are uniquely suited to construct Earth as “whole,” Parks and Schwoch caution that the inequality of ownership of these technologies, which “have been historically developed by a small number of nation-states and corporate entities, making the technology’s association with the “global” tenuous, if not specious.”⁸⁴ The authors remind that given that participation in satellite programs across nations are in constant flux, their relationships to the “global” and “globalization” must be considered as historically shifting fields of power relations. Parks and Schwoch made these claims in 2012; at the time of this writing nearly ten years later, satellite programs have advanced and changed shape, as has the infrastructure and effects of globalization, now visible, for example, in environmental degradation and mass migration (also issues related to landscape). It is therefore conceivable that the terms “global” and “globalization” have also changed in meaning, so that the latter is now more closely associated with a heightened sense of geographical inequality, than a dynamic sense of connectivity.

Scopic Regimes

Many of today’s ubiquitous technologies variously promoted under the guises of efficiency (GPS), objectivity (AI), entertainment (social media), security (CCTV), and connectivity (satellites) are organized and operated through scopic regimes. Originally coined by the French film theorist Christian Metz (1962), the term “scopic regime” was an attempt to differentiate

⁸³ Warf, “Dethroning the View from Above,” 47.

⁸⁴ Indeed, as Barney Warf points out, “the majority of the producers and users of satellite are concentrated in Europe and North America, asserting a Western domination of the global information structure through the production, transmission, and consumption of electronic discourses.” Qtd in Lisa Parks and James Schwoch (Eds.) *Down to Earth*, 3.

between theatrical and cinematic ways of seeing.⁸⁵ “What defines the specifically cinematic *scopic regime*,” he wrote, “is not so much the distance kept... as the absence of the object seen.”⁸⁶ The scopic regime, says geographer Derek Gregory, “has since been uncoupled from any specific forms, displays, and technologies to denote a mode of visual apprehension that is culturally constructed and prescriptive, socially structured and shared.”⁸⁷ Gregory identifies the scopic regime as a companion term to visibility, “meaning culturally or techno-culturally mediated ways of seeing, the concept is intended as a critical supplement to the idea of vision as a purely biological capacity.”⁸⁸

In a military sense, these “techno-culturally mediated ways of seeing” can be reduced (or refined) to a system of othering that attempts to differentiate “the good guys from bad guys.”⁸⁹ Public and state surveillance systems function accordingly, while adaptations of this practice provide, for example, an algorithmic basis of many commercial dating applications.⁹⁰ It is, in all cases, worth thinking about who defines the parameters of the scopic view, where they are most often employed, and by which definitions a target is designated. It is necessary to consider the cultural sets of practices that inform the default standard that distinguish “normal” from “abnormal”; “foreign” from “local”; “right” from “wrong”—binaries whose end goal is to rate degrees of threat. By extension it is important to consider how these standards are prescribed to

⁸⁵ Martin Jay, “Scopic Regimes of Modernity Revisited,” in *Essays from the Edge* (University of Virginia Press, 2011), 3.

⁸⁶ Christian Metz, “The Imaginary Signifier,” *Screen* (Vol. 16 Issue 2, 1975), 17.

⁸⁷ Derek Gregory, “From a View to a Kill: Drones and Late Modern War,” *Theory, Culture and Society*, 2011 (SAGE Los Angeles New Delhi London and Singapore) Vol. 28 (7-8): 188-218, 190.

⁸⁸ Ibid.

⁸⁹ Kaplan, “Drone-o-rama,” 174.

⁹⁰ “Scopic views” are now a defining articulation in guiding algorithms that, for example, advance targeted marketing to individuals. Based on past site visits, algorithms serve up relevant content, thereby creating worldviews that are essentially conduits of the past, carrying within it, discrimination and “coded inequity” which is algorithmically advanced. See: Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code*. (Cambridge; Boston: Polity Press), 2019.

particular bodies in particular places. In a counter-terrorism context, scopic views become the lens to what Atiya Husein describes as “an organizing principle for delineating and managing problematic populations domestically and internationally, [...] a policy framework intended to suppress those who pose a demographic threat to the state.”⁹¹ At a foundational level then, scopic views can be seen to operate on the principles of systemic othering that depends primarily on optics.

Some technologies, such as unmanned aerial vehicles (drones), are marketed to fulfill a range of functions—they are at once killing machines and a hobbyist’s gadget, delivering death or spectacular vistas from a “novel” viewpoint. Misleadingly marketed as objective, and alternately perceived as God-like (as in a Predator view over Afghanistan) or whimsical (as a recreational photographer’s tool). More objectifying than objective, drones are geopolitically ordered and the easy slippage between functions of war and recreation is directed by a globalized restructuring of spatialities in which proximity and distance (or home and abroad) are opposed. Weaponized drones intensify the distance between the shooter and the target and have become the functionary tool of distanced warfare, while operating within the model of globalization as a vast exercise in long-range mobilities of importation and exportation. The function of drones is geopolitically ordered, with a Western conception of “local” associated with recreation applications such as to capturing, wedding vows from a unique angle; while in foreign geographical areas, operations of hunter/killer machines are classified. In suspected sites of insurgency (for example, Yemen or Pakistan), events such as weddings have not infrequently been made targets of drone strikes, through a simplified logic (also geopolitically informed) that interpret groups of people as militant assemblies.

⁸⁹Atiya Husein, “Terror and Abolition,” *Boston Review: A Political and Literary Forum*, June 11, 2020. <https://bostonreview.net/race/atiya-husain-terror-and-abolition>

All of the select technologies named above interact and in some way become extensions of one another and can thus be conceived of operating principally on vertical or horizontal axes. The early twenty-first century was the beginning of a great media bloom, when frequencies and signals criss-crossed in the atmosphere at previously unknown frequencies and speed, making events more immediate, visible and produced. Powell's satellite images taken in Iraq in 2002, publicly presented in 2003, stood at the threshold of the digital era when the internet was still relatively young. They were straddled in between 2000, the boom year for the production of analogue images, and 2005, when YouTube was first launched; while closely predating the 2007 release of the iPhone, whose smart technologies made developed parts of the world a much more connected and pictured place. This is a severely abbreviated list of technological developments occurring in the early 2000s, all of which would have had an impact on visual and information culture, as "network" became the new keyword defining what was to be the map work of a "global village," whose utopic version never manifested.⁹²

This is to say that in 2003, the year that directly relates to the chapter's case study, an extended comprehension was not yet available as to the invisible infrastructure of contemporary digital image and information systems constituted by countless intersections of vertical and horizontal technologies. It is therefore likely that public understanding of novel technologies being developed and marketed at the time could be qualified as "low." The internet was the distinct game changer that quickly gained ubiquity and whose operation was, for the most part, learned intuitively by users who received no manual of operation. It is important to remember that the internet was a Cold War invention by Advanced Research Projects Agency (ARPA), a branch of

⁹² Mitchell in *Cloning Terror*, points out how Marshall McLuhan is often wrongly attributed to this utopic vision of the global village, recognizing within it the potential of its contemporary manifestation described by "a terrifying immediacy of viscerally intimate violence portrayed in real time." W.J.T. Mitchell, *Cloning Terror* (Chicago: University of Chicago Press, 2011), 98.

the U.S. Defense Department. It was developed in 1969, as an early warning system in the case of nuclear attack by Russia, while made publicly available in 1983. Indeed, the majority of the technology made ubiquitous and considered essential today – both at the small hand-held scale and large outer-space scale were originally military inventions.

Trevor Paglen warns that throughout their range of contemporary ubiquitous applications, some of which are now considered so invaluable that access to them becomes a matter of human rights, technologies cannot be decoupled from their military origins.⁹³ Caren Kaplan extends Paglen’s position in identifying “the militarization of daily life” occurring in globalized societies increasingly structured by Geographic Information Science (GIS) and Global Positioning Satellite (GPS) technologies: “Regardless of whether or not we serve in the military or have the means to afford the latest electronics, residents of the United States are mobilized into militarized states of being.”⁹⁴ Echoing Kaplan’s sentiment, Rey Chow acknowledges the re-conception of space advanced by the war on terror wherein traditionally militarized spaces bleed into civilian ones:

As a condition that is no longer separable from civilian life, war is thoroughly absorbed into the fabric of our daily communications – our information channels, our entertainment media, our machinery for speech and expression. We participate in war’s visualization of the world as we use – without thinking—television monitors, remote controls, mobile phones, digital cameras, Palm Pilots, and other electronic devices that fill the spaces of everyday life.⁹⁵

In keeping with Paglen’s claim that technology cannot be decoupled from its military origins, it then becomes possible to say as well that the perspectives that are used and amplified by these technologies also hold militarized ligatures.

⁹³ For example, in 2016, the UN passed a General Assembly passed a non-binding resolution declaring internet access a human right.

⁹⁴ Caren Kaplan, “Precision Targets: GPS and the Militarization of U.S. Consumer Identity,” *American Quarterly* 58, no. 3 (2006):708.

⁹⁵ Chow, *The Age of the World Target*,34.

A time of robust technological development, the period between the attacks on the World Trade Centre in 2001 and 2003, the year of the U.S.-led invasion of Iraq are referred to by Roger Stahl as a “militainment bubble,” in which “audience attention, rallying effects, culture industry profit, and Pentagon interests aligned to produce a certain kind of consumable war.”⁹⁶ The landscape image fits into this consumer model of war by assuming a status of currency, what W.J.T. Mitchell describes as a “marketable commodity to be presented and re-presented in “packaged tours.”⁹⁷ President George W. Bush declared a “war on terror” in response to a spectacular vertical attack and promoted it as a televisual event. In retaliation against al Qaeda, the war on terror would be horizontal in design, in its proposed temporal and spatial scope, and selectively invisible in its methodology: “Americans should not expect one battle, but a lengthy campaign, unlike any other we have seen. It may include dramatic strikes, visible on TV, and covert operations, secret even in success. We will starve terrorists of funding, turn them one against another, drive them from place to place, until there is no refuge or no rest.”⁹⁸ The war on terror on its Iraqi “front” would operate around a logic of image dissemination across airwaves, and displacement of citizens across geographies.⁹⁹ As summarized by Parks, “The war on terror, in other words, would be a war of boundless battlefronts and endless timeframes —a “perpetual,” “forever,” and “everywhere” war, as critics have described it, a war that would match the scale and proportion of its initiating event, its vertical surprise.”¹⁰⁰

⁹⁶ Roger Stahl, *Militainment Inc: War, Media, and Popular Culture* (New York: Routledge, 2010), 140.

⁹⁷ Mitchell, “Imperial Landscape” in *Landscape and Power*, 15. This could be applied Powell’s use of the satellite images during the U.N. presentation, as he was essentially trying to “sell” the audience on the need for invasion.

⁹⁸ “Text of George Bush’s Speech,” *The Guardian*, September 21, 2001, accessed Jan 4, 2021, www.theguardian.com/world/2001/sept/21/september11.usa13

⁹⁹ As of 2020, 9.2 million Iraqis are internally displaced or refugees abroad. “Costs of War,” Watson Institute of International and Public Affairs at Brown University, web.

¹⁰⁰ Parks, *Vertical Mediation*, 2.

While the transformations in the media environment activated by the horizontal and rhizomatic registers of the internet made information more accessible, it did not more laterally reorder political, economic, and cultural relations. Where once the graticule of Mercator projection formed a system of quadrants that organized a Western conception of mapped space, the globalized world, pictorialized as “digital Earth,” is now divided as it is connected through a system of invisible crosshairs that collide or collude on atmospheric levels. Google Earth, the digital version of the globe, is what Laura Kurgan describes as less “a comprehensive blanket of uniform-resolution (or real-time) images, [than] a patchwork of archived aerial and satellite images of varying origins, sources, motivations, and resolutions.”¹⁰¹ And just as critical cartographers have demonstrated that mapmaking was historically (and remains) “a social process deeply wrapped up in the complex political dynamics of colonialism and political domination,”¹⁰² the invisible gridwork formed by myriad signals, the majority of which are produced and received in the West, are motivated by and enact similar projects towards control and power. Kurgan cautions that,

...although high-resolution satellite images are by now naturalized as authoritative and map-like, the rigor (and we could even say the truth) of their embeddedness into the coordinates of longitude and latitude, the digital grid of navigational lines, should not be allowed to efface their military-political origins, of the technologies that have produced them, or the relativity and “ambivalence” that can render the so profoundly opaque and disorienting -- and demanding of interpretation.¹⁰³

I argue that the work performed by the grid in a cartographical context, as described in the following passage by Barney Warf, finds a similar expression through a coded system of horizontal and vertical information embedded within the Western landscape tradition which is similarly producing geography and space as cultural conceptions:

¹⁰¹ Kurgan, *Close Up at a Distance*, 20.

¹⁰² Warf, “Dethroning the View from Above,” 45.

¹⁰³ Kurgan, *Close Up at a Distance*, 34.

For example, the grid formed by latitude and longitude deployed by Europeans world-wide greatly facilitated the exchange networks of incipient capitalism, making global space smooth, fungible, and comprehensible by imposing order on an otherwise chaotic environment. The projection of Western power across the globe necessitated a Cartesian conceptualization of space as something that could easily be crossed. The function was performed well by the cartographic graticule of meridians and lines of latitude, which positioned the world's diverse locales into a single, unified, and coherent understanding designed by and for Europeans; this view also allowed places to be compared and normalized within an affirmation of a godlike view. Colonial mapping was thus not simply a tool for administration, but also a validation of Enlightenment science and a central part of the colonial spatial order: mapping offered both symbolic and practical mastery over space -- in this case, maps -- did far more than represent entities that existed before them; maps play an active role in producing that very geography. Spatial discourses, in short, are simultaneously reflective and constitutive of the reality they represent.¹⁰⁴

The Mercator projection attributed to Flemish cartographer and geographer Gerardus Mercator in 1569 was developed as an essential tool for marine navigation. Its operation at a basic level can be said to depend on targeting. A route known as rhumb line or loxodrome was essentially a straight line connecting two points on a map, representing the direction that must be followed to arrive at a given destination. Mapping the earth digitally is now achieved through vertical layering of digital images taken over a span of time in a practice called tiled rendering, which produces Earth as a spatial and temporal composite or palimpsest.

The digital conception of quadrants, unlike the Mercator projection, are not two-, but three-dimensional models of space, or what Parks terms a “vertical field” consisting of combinations of, terrestrial, aerial, spectral, and/or orbital domains. A vertical hegemony is produced as state and corporate agencies battle to control or dominate this field. This struggle, Parks explains, “is undergirded by the assumption that controlling orbit, air, and spectrum is tantamount to controlling life on earth.”¹⁰⁵ Vertical hegemonomies describe the sedimented logic through which power is

¹⁰⁴ Warf, “Dethroning the View from Above,” 45.

¹⁰⁵ Parks, *Rethinking Media Coverage*, 4.

vertically ordered and operated and then laterally leveraged across social domains¹⁰⁶. Through a feminist, post-structuralist critique of verticality Parks challenges “the constructedness of vertical forms of power and their stronghold on everyday social relations and influencing politics of difference, and which continue to form the structure of the state, worldwide.” Parks insists (and the present thesis supports):

There is nothing inevitable or natural about top-down domination, subjugation, oppression, exploitation, observation or violence, and yet the modern nation state, the contemporary world order and socio-economic systems are structured and imagined in ways that continue to reproduce, and even intensify relations among multiple axes of social difference.¹⁰⁷

Vertical hegemonies are not achieved in an isolated aerial space but must necessarily assume conception and materialization on earth as well, through a process that Parks refers to as “vertical mediation.” Conceptualized as “a dynamic process described by movements through aerial fields and spatial interactions between the earth’s surface and aero-orbital platforms,” vertical mediations contribute to ways and orderings of life.¹⁰⁸ Parks asserts that interrogating these processes necessarily requires attentiveness to the capacities and limits of geospatial forces to enact “unpredictable reversals of power it may be implicated in as well. In short, it involves treating the geospatial image not as a static frame of image data, but as part of biopolitical processes, as part of processes of “... becoming, of bringing-forth and creation.”¹⁰⁹ It is with such conception of space as a vertically ordered construct activated by the intersections of horizontal and vertical registers that will serve as a partial analytical guide of the satellite images presented by Colin Powell at the U.N. in 2003.

¹⁰⁶ Ibid., 104.

¹⁰⁷ Lisa Parks, *Vertical Mediation and the War on Terror*, Lecture at the Institute of Humanities and Global Cultures, Oct. 27, 2018 <https://www.youtube.com/watch?v=plS7Wd6e5U>

¹⁰⁸ Parks, *Vertical Mediation*, 104-105.

¹⁰⁹ Ibid., 105.

Logistics of Perception

In *War and Cinema*, first published in 1984, Paul Virilio defined the notion of a “logistics of perception,” which he considered essential to the development of modern warfare. Logistics of perception can be conceived as a kind of mapping project of lines extended from A to B; as a network depending on vertical and horizontal registers.¹¹⁰ As Virilio explained in a later interview:

The idea of logistics is not only about oil, about ammunitions and supplies but also about images. Troops must be fed with ammunitions and so on but also with information, with images, with visual intelligence. Without these elements, troops cannot perform their duties properly. This is what is meant by the logistics of perception.¹¹¹

Antoine Bousquet notes that while often overlooked in accounts of war, logistics have historically been a crucial element in military operations. This role, he says has only intensified through the modernization of war, “the unprecedented endeavours in this area prompted by WWII directly gave rise to the modern business science of logistics that today supports globalized economic production and commercial trade.”¹¹² In his presentation, Powell was contributing to a perception of logistics, that necessarily involved “the orderly movement of information and images,”¹¹³ and if such movement could not be perceived, then it could be produced.

Historically, aerial vision and tactical management emerged simultaneously into the global economy, as WWI and the interwar period inspired significant advances in visioning technology. Late-modern war necessitated new development of increasingly specialized aerial technologies and aerial images, at a moment coinciding with the growing popularity of GPS, making digital maps a more common guide for civilian navigation.¹¹⁴ This new ubiquity, says Kurgan, was

¹¹⁰ Virilio, *War and Cinema*, 15.

¹¹¹ Ibid.

¹¹² Antoine Bousquet, *The Eye of War: Military Perception from the Telescope to the Drone* (Minneapolis: University of Minnesota Press), 50.

¹¹³ Ibid., 6.

¹¹⁴ In the early stages of civilian use of GPS technologies, there was little awareness by civilians that they also served as tracing tools, as much as guiding ones.

inspired by the Gulf War (1990-91), a precursor to the Iraq War (known as the second Persian Gulf War), whose significance was not only as a point of “military fact as a matter of the deployment of lethal violence and destruction, but war as a public and media event, as a matter of images.”¹¹⁵

The logistics of perception, says Bousquet, is therefore “not a mere metaphorical turn of phrase but a quite literal description of the perceptual field’s organization in modern warfare.”¹¹⁶ It is formed of three key functional elements working together to align perception and destruction: sensing, imaging, and mapping: “materially instantiated in a multiplicity of different sociotechnical systems, the articulation of these three functions underlies the logistics of perception in the military targeting of force.”¹¹⁷ The logistics of perception are ever-present in the contemporary quotidian—the ubiquity and the versatility of their applications contribute to, as Chow and Kaplan (for example) have observed, the militarization of daily life.

The satellite images as used by Powell were perceived as eerily still images latent with a double form of the potentiality: that of terrorism, and the image itself as a weapon, capable of enacting precise violence on individual targets, while enabling wider campaigns affecting institutions, populations, and nations. The satellite view not only opened the curtain to the theatre of war in Iraq, in concert with other remote aerial technologies such as drones, it extended a more firmly defined war field to a “global battlefield.” And with that extension says Bousquet, the practice of targeting becomes more globalized and individualized, [and] the notion of distinct temporal and spatial bounds for the exercise of armed force becomes ever more untenable.”¹¹⁸ The war on terror participated in this spatial and temporal expansion of the battle field, becoming what

¹¹⁵ Kurgan, *Up Close at a Distance*, 85.

¹¹⁶ Bousquet, *The Eye of War*, 8.

¹¹⁷ Ibid.

¹¹⁸ Bousquet, *The Eye of War*, 4.

Derek Gregory calls the “forever” or “everywhere war,” which he defines as both a “conceptual and a material project whose scope can be indexed by three geo-graphs that trace a movement from the abstract to the concrete”:

Foucault’s (1975–6) prescient suggestion that war has become the pervasive *matrix* within which social life is constituted; the replacement of the concept of the battlefield in US military doctrine by the multi-scalar, multi-dimensional ‘*battlespace*’ with ‘no front or back’ and where ‘everything becomes a site of permanent war’ (Graham 2009, 389; 2010, 31); and the assault on the global *borderlands* where the United States and its allies now conduct their military operations.¹¹⁹

The reconfiguration of the traditional battlefield also influenced the conception of how bodies occupy those spaces and reordered the dimensionality of target making. Grégoire Chamayou describes how the reimagining of the traditional battlefield “conceived as a broadly delineated space in which armed combatants has given way to ever more granular and time-sensitive ‘kill boxes’ within which with deadly force can be unleashed at will for the brief interval that they remain open”.¹²⁰ The kill box assumed a three-dimensional conception around the beginning of the twenty-first century (coinciding with the war on terror and its physical “front” in Iraq), which “enabled timely, effective coordination and control and facilitated rapid attacks.”¹²¹

¹¹⁹ Derek Gregory, “The Everywhere War,” *The Geographical Journal* (Vol. 177, No. 3, September 2011), 239.

¹²⁰ Grégoire Chamayou describes the “kill box,” a concept that emerged in the early 1990s as a “temporary autonomous zone of slaughter” that reflects a volumetric conception of space. According to contemporary doctrines of war, space is no longer considered homogeneous and horizontal, as it is on maps, but has become divided into mosaics of cubes of insurgent objectives and tactics. When the “kill box” is activated, combat units may fire at will, without further coordination. Grégoire Chamayou, *A Theory of the Drone*, (New York; London: The New Press, 2013), 55.

¹²¹ Bousquet describes how this “this more flexible and spatially restricted use of the kill box was notably deployed in the aerial support of the initial invasion of Iraq in 2003. With advancing precision of drones, the kill box’s scale has been contracting down to that of a target individual’s body, an exercise that the American military refers to as putting “war- heads on foreheads.” Bousquet, *The Eye of War*, 5.

According to Chamayou the kill box when activated becomes a “temporary autonomous zone of slaughter,”¹²² within which combat units can fire at will, without coordination. Its design reflects a volumetric conception of space, which in contemporary doctrines of war, replaced an idea of space as homogeneous and horizontal, as per cartographic conception. Classical military doctrines, which Stephen Graham describes as depending on “the horizontal projection of power across an essential ‘flat’ and featureless geopolitical space,”¹²³ now operate around an idea of sovereignty that is three-dimensional. “To put that in very schematic terms,” writes Chamayou, “we have switched from the horizontal to the vertical, from the two-dimensional space of the old maps of army staffs to geopolitics based on volumes.”¹²⁴

The geometrical conception of the “kill box” is poignant when considered in relation to the boxed annotations laid on top of the satellite images, while a volumetric conception of space has implications when considering the circumstances of their presentation in the enclosed U.N. assembly hall, where Powell could “fire at will.” At the time of the presentation, the suggestion was that these brightly coloured right-angled and circular shapes acted as containers of harm, and in designating the captured areas as targets, emphasized a sense of control. When it was proven that Iraq did not possess weapons of mass destruction, these circles and squares seemed to outline an emptiness, and highlighted the farce of the production. In terms of being evidence, there was a flexibility in the function of the images. Before the war, they were promoted as representing “sure signs” that Iraq possessed weapons of mass destruction, which then transformed into evidence of the systemic failure of intelligence, while demonstrating the capacity of images to manufacture untruths and even war.

¹²² Chamayou, *A Theory of the Drone*, 55.

¹²³ Stephen Graham, “Vertical Geopolitics: Baghdad and After,” *Antipode* 36, no. 1(January 2004),13.

¹²⁴ Chamayou, *A Theory of the Drone*, 55.

Landscapes as Vision Machines

With the organization of space designed by and understood as intersections of vertical and horizontal registers, this analysis will look at how this information is encoded within the Western landscape tradition and contributes to the landscape genre as an expression of imperial power. Powell's presentation depended heavily on the visual support of a PowerPoint presentation, which as Nicholas Mirzoeff points out, may have been the first instance of political usage of this Microsoft program, designed to visualize comparative analyses.¹²⁵ In its novelty, Powell leverages something of the ocularcentric power of Debord's spectacle society to present a view reminiscent of Foucault's panopticon, while guiding his audience through an exercise of "specialized visioning." This served to produce a definite conception of space in the otherwise ambiguous arena of the war on terror. Vision perhaps is always a specialized way of seeing, one that is readily associated with a codified ocular relationship to technical images, such as geospatial imagery. Vision, according to Martin Jay, is not solely a biological function, but a way of interpreting that is historically informed.¹²⁶ "To visualize, to gain insight, to keep an eye on something," says Barney Warf, "is to invoke a host of cultural and linguistic tools to make sense of reality." He continues:

Yet while seeing and vision appear so natural, obvious, and undeserving of attention as to be taken for granted, satellite observations in fact are products of a long line of Western thought that privileges sight, manages it, and shapes it through a variety of cultural assumptions. In this light, satellites not only have profound economic and social impacts but epistemological ones as well.¹²⁷

¹²⁵ Mirzoeff, *How to See the World*, 92.

¹²⁶ Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*, (Berkeley: University of California Press, 1994).

¹²⁷ Warf, "Dethroning the View from Above," 43.

The aerial perspective has since the Renaissance (and perhaps even before) held associations with divinity and imperial power: both viewed as supreme authorities, sometimes coalescing, in control of world order. This legacy is worth considering in a moment when aerial views now constitute the dominant visual paradigm through which landscape is represented. Despite the fact that militarization “often assumes subtle ideological and material forms,” Parks reminds that it is “equally as important to note the myriad ways in which consumer-citizens in the US and beyond register, respond to, contest, struggle over, reject, or rework such militarization.”¹²⁸ Visual art offers modes of such resistance or rejection of militarization, through strategies that subvert or frustrate ideological perspectives that often have geopolitical linkages, as will be given example in this chapter. Challenging the militarized perspective through artistic practices helps to remind, as Jay suggests, that there has never been one unified scopic regime organizing space.¹²⁹

Likewise, landscape is a term often broadly used to refer to the aesthetic organization of space in an applied or representative sense, but in both contexts, it too is a cultural construction that is historically informed. In his “Theses on Landscape,” W.J.T. Mitchell defines landscape not as a genre of art, but rather a “medium” found in all cultures, whose particular historical formation, despite the specifics of culture in which it is embedded, is consistently associated with Western imperialism.¹³⁰ In critically approaching vision, visioning machines, and landscape, similar linkages to history are revealed, which participate in producing world views that assert a Western ocularcentric and epistemological monopoly. As such, histories of seeing are amplified through technologies that capture or classify an arrangement of space that has been historically designed

¹²⁸ Parks, *Rethinking Media Coverage*, 9.

¹²⁹ Jay, “Scopic Regimes of Modernity,” 3.

¹³⁰ Mitchell, *Landscape and Power*, 5.

to assert imperial power. Landscapes are pictorial constructions that operate akin to technologies that modify and direct vision to produce an interpretation of space that is a representation of power.

The nebulosity of the war on terror evaded a neat pictorial definition of space clearly marked with topographical features and firm boundaries. Its formlessness seemed to escape the protective graticule that mapping projects imposed as part of the modernist regime of vision. After all, how could one map what one could not see? Satellites would become valued large-scale visioning machines tasked with imaging the “invisible” threats of a conceptual war, conceived as the potential for violence to erupt anywhere at any time. The boundless territory of the battlefield increased the potential number of combatants and victims, made targets more plentiful, but harder to define, and formed a temporal precipice that suggested that random acts of violence were in constant states of manifestation.

Within this lack of definite space or the suggestion of territories, both physical and psychological, which know no bounds there is some reference to the Romantic sublime of the nineteenth century. Aesthetically conceived as philosophical or physical quality of greatness or loftiness, Timothy Costelloe describes that etymologically, the sublime, “carries the long history of the relationship between human beings and those aspects of their world that excite in them particular emotions, powerful enough to evoke transcendence, shock, awe and terror.”¹³¹

With the overarching conception of terrorism as a limitless entity, and war designed in defense of an abstraction that could not be neatly defined, carried within it some referentiality to the Romantic abyss. The potency of this anxious space of the unknown is held in its largeness of scale in comparison to the human — a vacancy that could swallow one up—and quality of opacity that links it to such atmospheric effects in paintings such as fog, clouds, or smoke. To control a

¹³¹ Timothy Costelloe, *The Sublime: From Antiquity to Present*, 2.

site of such immensity required a panoptic eye that could catch the potentiality of everywhere and always. In the twentieth century, this role would come to be played by satellites. However, their imaging power was not godlike and both their mechanical and material limits affected what could be captured, which often left landscapes devoid of human bodies.¹³² Therefore, actors operating within these spaces and the forces which they employ are equally difficult to define, and assume a ghostly presence. As though in aesthetic response to the sublimity of the counter-terrorism project, U.S. military strategy drew upon sublime characteristics in designing a “shock and awe” program whose goal is to “achieve rapid dominance over an adversary by the initial imposition of overwhelming force and firepower.”¹³³ This was not a military strategy designed around precision, but was a choreographed towards a generalized effect that operated to a large degree on a psychological level.

Originally designed in 1996 by American strategic analysts Harlan K. Ullman and James P. Wade, the “shock and awe” program would be notoriously applied (and televised) during the war in Iraq in March 2003. The American general Tommy Franks introduced the 2003 iteration of the “shock and awe” campaign as “historically unprecedented for its flexibility and ability to surprise, and the precision and scale of the munitions employed.”¹³⁴ Images were integral to the program. Spectacular videos and photographs of nighttime bombings of Baghdad proliferated in Western media and were eerie contemporary examples of the art historical nocturne landscape tradition popular in the sixteenth and seventeenth centuries (Fig.3). Such nightscapes were mostly

¹³² As Eyal Weizman explains, “satellite photography is distinguished by two of its most pronounced limitations: it can capture neither people (because of resolution) nor incidents (because of orbit time).” Weizman, *Forensic Architecture*, 98.

¹³³ Harlan K. Ullman and James P. Wade, *Shock and Awe: Achieving Rapid Dominance*. (National Defence University, 1996), 19.

¹³⁴ “Shock and awe: Quick reference,” *Oxford References*. Accessed Aug. 26, 2021. <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100502693>

exercises of light, which showcased dramatic or moody atmospheric effects that obfuscated the horizon line, was a pictorial device of ambiguation that would remerge in the Romantic sublime.

Mitchell describes how “the murder of innocent noncombattants, along with the deployment and destruction of images are crucial elements to a terror campaign as terrorism is a tactic that operates primarily at the level of the imaginary.”¹³⁵ The attacks on 9/11, he notes, held no military significance but operated on the level of spectacle in the symbolism of the fall of an empire which would enact nationwide trauma. “The concept of a ‘war on terror,’ in this light,” says Mitchell, “is revealed as a highly dubious fantasy, a form of symmetrical warfare that treats the enemy as an emotion or a tactic (as if one could make a “war on flanking maneuvers”).”¹³⁶ Powell’s PowerPoint presentation concretized many of the nebulous aspects of a conceptual war, which relieved some effort on the part of patriotic collective imaginary in no longer having to conjure what terror looked like or where it was harbouring, waiting to spring. In a series of slides showing a restricted square footage of an otherwise unremarkable industrial landscape in Iraq, made of a desert floor and a Brutalist style building, Powell gave form to the foreign factories of terror, conceived as an imported “product,” whose form was defined in only a slightly more exacting terms of “weapons of mass destruction.”

The credibility of images was likely attributable on some level to the fact that they provided a landscape adorned with the suitably nebulous signatures to fulfill the racialized definition of terrorist that criminalizes Muslim identities and geographies. Sand may have been the most useful pictorial detail in producing terrorist plotlines out of Orientalist tropes, the latter being perspectives formed of the European assumption that fetishized Eastern cultures needed to be translated or

¹³⁵ Mitchell, *Cloning Terror*, 21.

¹³⁶ *Ibid.*

described in reference to Western practices. Commenting on official attitudes in Washington at the time of the Iraq invasion, Edward Saïd remarked that U.S. officials held cartographic desires to “change the map of the Middle East.” Such ambitions, notes Saïd, have often been expressed towards “the ‘Orient,’ that semi-mythical construct, which, since Napoleon’s invasion of Egypt in the late-eighteenth century, has been made and remade countless times by power acting through an expedient form of knowledge to assert that this is the Orient’s nature, and we must deal with it accordingly.”¹³⁷ As such, the ground-level code formed by the arrangement of the building and roads on a flat granular surface, would be read by the U.S. not with an acknowledgement of local practices, but rather through an imperialist lens that would overlay a Western narrative on a foreign, which reinforced the Middle East as mysterious and volatile, which needed to be “dealt with accordingly.”

Within this landscape of uncertainty, the satellite images were lauded as the key evidence, perhaps not because they revealed what was then considered “undeniable proof” that Iraq possessed weapons of mass destruction (they did not), but in their consolatory role in outlining a landscape, by virtue of its Middle-Eastern otherness made it a space of anti-American sentiment and fulfilled the requirements of a visual imaginary in which terror was considered a product of Arab nations. Therefore, just as Saddam Hussein had become the embodiment of the war on terror (a role which would be subsequently transferred to Asama Bin Laden), Iraq, became the physical front for the conceptual battle of the “everywhere war.”

And while Bush’s war on terror was designed around an abstraction, which he himself played a part in defining, it is important to note that concrete effects were felt through the development of urgent and robust anti-terrorism campaigns, which continue to this day and have

¹³⁷ Edward Saïd, “Preface to the Twenty-Fifth Anniversary Edition,” *Orientalism*, (New York: Vintage) 1978, xviii.

contributed to a distinct ant-Muslim sentiment in the US, while also giving to a broader racialized scope in which Black and Brown bodies are othered and criminalized. As Aly Panjwani and Lea Kayali describe:

The War on Terror is predicated on the idea that terrorism is a kind of distant violence subject to exceptional rules of policing and war. This distinction is clear through the over twenty years of post-9/11 surveillance and policing that has devastated Black, Brown, and Muslim communities both here in the United States and across the globe. From the invasion of Iraq and Afghanistan and the CIA's torture program, to the FBI's use of informants, in the United States and designation of Black activists as Black Identity Extremists, counterterrorism policies aim to subjugate the communities that the state defines as security threats and assert control.¹³⁸

These very real effects that hold a global resonance, are the products of what Panjwani and Kayali call a "security theatre," which was the essence of the war on terror, as extensive violence predicated on falsehoods. Powell's satellite images, therefore, can be seen as the pictorial description of a that theatre's platform—a stage plan for a clash of civilizations. Images, moving and still, continue to play the role of munitions in the never-ending war on terror, and in their mass mediatization are being flexibly used to produce unstable meanings of terror and counterterrorism.

Paul Virilio had earlier identified an operational shift in the photograph taking place during WWI, which was spurred on by the increased circulation of images, at which time the photograph "ceased to be an episodic item, [becoming instead] a flow of pictures which fit perfectly with the statistical tendencies of the great military-industrial conflict."¹³⁹ It is via this approach to the photograph, as a document in flow and in interaction with moments of history, and in recognition of their multi-media representation, that the satellite images taken of Taji, Iraq in 2003 must be understood. Looking at them now, they are testaments of what W.J.T. Mitchell

¹³⁸ Aly Panjwani and Lea Kayali, "The White Supremacist Agenda of the War on Terror," *Qalam, Medium*, Jan. 25, 2021.

¹³⁹ Virilio, *War and Cinema*, 61.

identifies as the double reality of every history: “the history of what actually happened, and [...] the history of the perception of what happened.”¹⁴⁰ The first kind of history, according to Mitchell, concerns itself with facts and figures, while the second on the images and words that provide a structure that gives meaning to such evidence. I offer as well, that while participating in this dyadic iteration of history formed of actual event and its meaning-making narratives, the satellite images are also premonitory documents revealing the generative capacity of images, which early in the twenty-first century was yet to be significantly exploited as a multi-media production.

Much of the perceived credibility of Powell’s presentation, which to some, solidified the argument as “irrefutable,” was founded on the satellite images, which were described as “key evidence.”¹⁴¹ The credibility of the photographs could be attributed, in broad strokes, to a cultural faith in ocularcentrism which according to Jay bestows upon photographs the perceived ability to “transcend specific cultural contexts and show ostensibly what could not easily be said or merely described,” and as such become, “iconic analogues of their objects.”¹⁴² The objects in the case of these photographs were for the most part architecture and infrastructure seen from exterior aspects at a distance, as such the photos more than being a register of the real, could be seen as articles of faith in visioning technology as machines of objectivity as essential tools of the newly globalized world of the early twenty-first century.

Vision Machines II: The Weaponized Image of WWI

In order to understand the stakes of Colin Powell’s images, it is worth looking at twentieth century history of military images, which will reveal how aerial photographs of early

¹⁴⁰ Mitchell, *Cloning Terror*, xi

¹⁴¹ It is important to note that the U.N. Security Council did not approve Powell’s bid, and that therefore the U.S.-led and British-backed invasion of Iraq was unsanctioned and illegal.

¹⁴² Jay, *Essays from the Edge*, 41.

modern war necessitated new ways of seeing. While the images in Powell's PowerPoint showcased a variety of content, they also displayed a range of scale and perspectives—the satellite photos offered a view of landscape, showcasing architecture (buildings) and infrastructure (roads) from above and at a distance, while the human portraits were composed on a horizontal axis from shorter range assumedly from an embodied photographer. The drawings were basic digital mock-ups (Autocad renderings) of container trucks rendered from memory, which like the satellite images were highly annotated (Fig.4). The collection of images was only contextually related in the sense that they were defined as physical evidence of otherwise invisible network of activity — the portraits of the major suspected actors were cropped photos, which for example showed the individuals, in domestic or otherwise unofficial settings. Meanwhile the machine-rendered drawings floated surreally on a mottled light-brown surface as a highly artificial representation of a desert landscape. Even the relationship between the two photographs displayed side by side on the slide “Sanitization of Ammunition Depot at Taji” is not clear, as no metadata or points of orientation are given that would prove that these are photos of the same place taken supposedly at an interval of roughly one month.

Photographs, particularly those from an aerial perspective, have been essential to military operations since WWI, a moment which motivated exceptional advancement in aerial technology. For example, the British Royal Flying Corps brought only one official camera with them to France, and the first attempt at aerial photography occurred on Sept. 15, 1914. Annotated photo mosaics were being assembled by January 1915; handheld Type A cameras (Fig.5), were in use by March of that year, and by summer, semi-automated Type C cameras were fixed to aircraft (Fig.6).¹⁴³ Denis Cosgrove described the application and effect of the airborne automatic camera invented by

¹⁴³Derek Gregory, “Gabriel’s Map: Cartography and Corpography in Modern War,” Social Theory Lecture, UK College of Arts and Science, Jan. 25, 2013. 25 min <https://vimeo.com/59072598>

Oscar Messter in 1915, which “allowed pilots to film a 60-by 2.4 kilometer strip of land surface in a sequence of frames at the scale of topographical maps.” As such, “a new mode of geographical representation was created: ‘a flattened and cubist map of the earth’ which demanded new skills to relate to the ground.”:

Composite photographic images demanded a different way of looking than the still photograph did. The eye moves over the virtual space of the image as across a map, parodying in some measure the kinetic vision of the flyer...Over time the aerial photograph, and more recently, remoted-sensed images have become codependent with the map.”¹⁴⁴

It is clear from Cosgrove’s observation that not only was the space of the world during the First World War being imaged through a novel perspective but were, through these aerial prospects, producing new visual approaches to images. This new cartographically informed relationship with images was further intensified by the volume of photographs produced during this period. According to Derek Gregory, the war on the Western Front, was the most optical war yet, with the volume of images describing the effort of trying to capture its first phase (August-September, 1914) seeming to herald it as “a war of movement.”¹⁴⁵ With troops constantly advancing, reconnaissance was conceived as the primary function of the aircraft, despite the fact that officers had no training in the activity.

Aerial reconnaissance photographs were used in combination with field sketches by artists on the ground to provide vital intelligence that constantly confounded what Gregory describes as a meticulously planned “clockwork war,” with both viewpoints operating on a form of scopic control. “The field sketch by trained military draughtsman,” describes Gregory “shared something of the solitary fixation of the sniper ceaselessly scrutinizing a fixed front, homing in on hidden

¹⁴⁴ Cosgrove, *Apollo’s Eye*, 239 and 242.

¹⁴⁵ Gregory, “Gabriel’s Map.”

enemies and picking out the target.”¹⁴⁶ While Paul Gough compares the logic of the aerial panorama working,

...on the same basis as military mapping—that is the act of surveying and transcribing a landscape helps neutralize the dangers of uncertain terrain and eventually assure mastery over it. The discipline of panoramic drawing reduced any landscape...into a series of immutable coordinates and fixed datum points.¹⁴⁷

Many parallels can be identified in the logistical applications of photographs between WWI and the War in Iraq, a century later. Just as the satellite images at Taji must be understood in relation to the photographs taken in Manhattan on 9/11, the military mechanics of optics and the coordination of viewpoints that were developed on the Western Front in 1915 must be considered in terms of their influence on how logistical images in the early twenty-first century were engaged with and read. As Gregory, Gough and Jane Mattison reveal, images (both photographs and sketches) had to be produced from a range of perspectives in an effort to capture the full arena of war in an effort equivalent to a mobilization of static maps.

The need for a pictorial spectrum of angles increases in relationship with the intensification of enemy bombardment, as Mattison describes, “Every angle of rifle fire taken by the enemy had to be considered, enfilading and such.”¹⁴⁸ In concert with the increased production of ground-level sketches was an ever-shortening temporal period between the taking of aerial reconnaissance images to their arrival at headquarters. According to Gregory, it was this extraordinary speed with which intelligence was being produced and circulated in cartographic form (founded on images), that made possible the apparent stasis and stabilization of the Front.¹⁴⁹

¹⁴⁶ Gregory, “Gabriel’s Map.”

¹⁴⁷ Paul Gough, “Calculating the Future: Panoramic Sketching, Reconnaissance Drawing and the Material Trace of War,” In N. Saunders & P. Corinish (Eds), *Contested Objects: Material Memories of the Great War* (London:Routledge, 2009), 244

¹⁴⁸ Jane Mattison, *Walter Draycot.com* Accessed. March 2021

¹⁴⁹ Gregory, “Gabriel’s Map.”

It is not difficult to see that key terms describing military intelligence of the early twentieth century such as speed, circulation, and flow were premonitions of a future, expanded construct of the great military-industrial conflict that would eventually produce the internet. This tool became the framework to a horizontal network linking with aerial technologies to form a globalized world, operating on military infrastructure.

Revisiting once again the attentiveness to a range of angles that would accommodate distinct fields of vision, in which patrol sketches “were often a collage of hearty impressions later re-arranged to form a spatial narrative,” the panorama is primarily concerned with scopic control and spatial dominance.¹⁵⁰ In considering this attentiveness to perspective in WWI, the comparative ground-level embodied viewpoint was very much absent in Powell’s presentation to the UN, which depended on satellite images sometimes shown in diptych, but whose relationship was not made clear by defining the locale, scale, or the viewpoint of the image. Powell’s presentation did not incorporate embodied sight but depended principally on the distanced view concerned primarily with scopic control and spatial dominance. This distanced view spoke to the way that the war in Iraq would come to be mediated as “shock and awe” photos of night-time bombing lit up prime-time television hours in the US.

The coordinated mechanics of aerial and ground-level photographic practices, the perspectives they respectively utilized (or avoided), and the information they revealed by vantage points that visualized the contemporary military invasion, needs to be understood in relation to the application of those technologies and methodologies during WWI. Understanding the original uses, interactions, and effects of early reconnaissance imagery reveals how terrestrial and aerial images were used in concert to form intelligence and provides insight as to why the satellite

¹⁵⁰ Gregory, “Gabriel’s Map.”20min06.

photographs (devoid of accompanying ground-level images) were so effective in persuading media and public opinion in a bid for war, much of it having to do with the cartographic relationships established with aerial images that rendered landscapes static.

This cartographic relationship also affected how information would be read from them, and it was Powell himself who said that specialists had been “pouring over light tables” in an effort to interpret them, once again imposing the god’s-eye view, while viewers of the PowerPoint presentation were obligated to understand the images at a perpendicular orientation. Just as the troops on the Western Front in 1915 had no training in reconnaissance, newly digital citizens of the early twenty-first century had no skills in the reading novel geospatial images. Nor were lay people in possession of the visual vernacular to understand the world from above, as it was increasingly described by satellite views, which ushered in a new conception of the world as a globalized space. The satellite photographs taken in 2003 pictured a newly imposed stasis on landscape, but the event of their presentation spoke to the war of images and their openness to interpretation. The perceived stasis in the images is also misrepresentative. As signaled by Parks, to be read correctly, geospatial images need to be understood in their participation in the dynamic interactions that describe vertical mediations between outer space and ground level. To read them as static icons further reinforces the vertical hegemony of the state—a logic that provides the undergirding to Powell’s promotion of them as technical and inert documents.

Western Landscape Traditions

The satellite images labeled “Sanitization of Ammunitions Depot at Taji” were presented as static placeholders which bookended an extensive catalogue of iconic photographs and videos that captured the chaos and dynamism of September 11, a day described by a spectacular network of mobility of collision collapse. In contrast, the satellite images showed a

landscape neatly contained and interpreted as a scene latent with menace coming into formation at imperceptible registers. The fact that no tangible proof could be proffered was used in a “negative evidence” argument that supported the American claim that the Iraqis were deceptive and substantiated the conception of the war on terror as a space of rife with violent potentiality that could not be defined until aftermath. That a network of vertical and horizontal logistics as vast as those that fell the iconic architecture of the American empire on 9/11 (the symbolism of tower collapsing itself communicating with past fallen empires and their vertically structured architectures not lost), signalled an urgency that pre-emptive action was necessary.

Having looked at the aerial images from the early twentieth century, I wish to argue that a further understanding of Powell’s satellite images and of aerial images more broadly can be found within the Western landscape tradition, as scenes that function ideologically as expressions of power. Furthermore, I suggest that the intersections of vertical and horizontal registers play instrumental roles in activating these pictorial expressions of power. Here I do not wish to encourage an oppositional conception of the vertical and horizontal, but rather situate myself alongside Kaplan who argues for a naturalization of these two views:

The relationship between vertical and horizontal views in the cultural history of Western modernity has been structured as always already oppositional. Therefore, like all binary categories, the distinction between the vertical and the horizontal has to be naturalized as foundational and mutually exclusive.¹⁵¹

When presented as evidence to the U.N. Security Council, Powell encouraged the photos to be read as they would be by the state, and so highlighted important details, while ignoring those not considered vital to the narrative pathos of the “selective reality” he was creating. Considered within the Western landscape tradition, Powell’s satellite images participate in other readings. His narrative overlay injects them with emotion, which activates what W.J.T Mitchell describes as the

¹⁵¹ Kaplan, “The Space of Ambiguity,” 155.

“dreamwork of ideology” wherein landscape is produced through “an imaginary projection of moods.”¹⁵² This, by extension, participates with the Orientalist attitudes Saïd noted in Washington officials at the time. Mitchell describes this “dreamwork” in a language which imitates that of spatial organization, as one that “unfold[s] its own movement in time and space from a central point of origin and fold[s] back on itself to disclose both utopian fantasies of the perfected imperial prospect and fractured images of unresolved ambivalence and unsuppressed resistance.”¹⁵³ Powell’s satellite images are exemplary of ideological dreamwork as a desert landscape in Iraq, whose architecture (as geometrical shapes) was made most salient, becomes an ideal stage in the production of a perceived resistance by the Iraqi regime. The fact that the buildings were devoid of any specific features that would give a clear indication of their purpose made them all the more effective in advancing theories that they were factories of chemical weapons.

Mitchell formed the theory of landscape as ideological dreamwork in response to Kenneth Clark’s Eurocentric conception of landscape paintings as objects that historically were reflective of human moods and served as odes to the “human spirit’s attempt to create harmony with its environment.”¹⁵⁴ The exploration, resource exploitation, and eradication of Indigenous peoples that described colonial projects seem at odds with the forging of harmonious relationships between Europeans and their newly claimed territories. As Mitchell describes, the “harmony” sought in landscape is read as “compensation for the screening off of the actual violence perpetrated there,”¹⁵⁵ or what John Barrell refers to as “the dark side of landscape.”¹⁵⁶ This dark side, says Mitchell, is not mythic or allegorical, but “a moral, ideological, and political darkness

¹⁵²Mitchell, *Landscape and Power*, 6.

¹⁵³ Ibid., 10.

¹⁵⁴Kenneth Clark, *Landscape into Art* (New York: Harper Collins, 1st U.S. Ed., 1977), 38.

¹⁵⁵ Mitchell, *Landscape and Power*, 7.

¹⁵⁶ John Barrell, *The Dark Side of Landscape* (Cambridge: Cambridge University Press, 1983).

that covers itself with precisely the sort of innocent idealism that Clark expresses.”¹⁵⁷ While Philip Fisher encourages an examination of landscapes with critical perspectives towards the “hard facts embedded in ideal settings.”¹⁵⁸

The industrialized desert landscape featured in Powell’s satellite images may not fit neatly into the Western conception of landscape as an expression of fecundity and growth reflective of the prospecting mood that Clark spoke of, but it does serve as an ideal reflection of the militarized prospector's view that Powell was commanding. A desert landscape and the signatures it held, provided a site open to an Orientalist reading, which activated both the pictured location and the photographs themselves as “hard facts.” These helped to confirm a strategic suspicion for which an American public had been primed and cemented long-held biased cultural beliefs that saw Muslims as terrorists.

In reading the satellite images of the desert through an art historical lens, there is an acknowledgement, as Mitchell asserted, that they are embedded with cultural meanings and values. Landscapes are also historically encoded with horizontal and vertical information. These registers were instrumental to the mathematical construction of space achieved through the discovery of linear one-point perspective in Renaissance Italy by Filippo Brunelleschi, circa 1420. The findings of Brunelleschi’s famous Florence baptistery experiment were later articulated by Leon Battista Alberti, which served to pictorially canonize linear one-point perspective. Single-point perspective was widely employed in the Italian Quattrocento, and principles of this methodology were also adapted in the Netherlands and visualized in sixteenth-century perspectives.

¹⁵⁷ Philip Fisher, *Hard Facts: Setting and Form in the American Novel* (New York and Oxford: Oxford University Press, 1985), 9.

¹⁵⁸ “Full Text of Colin Powell’s Speech,” *The Guardian*, Feb5,2003.
<https://www.theguardian.com/world/2003/feb/05/iraq.usa>

Since the Renaissance, linear perspective has retained its canonical status as a dominant visual paradigm which designates the operation of pictorial space, arranged on horizontal plane, around a centrally located vantage point “determined by the position of a stationary viewer situated a fixed distance from the picture plane.”¹⁵⁹ Contemporary militarized scopic regimes retain such fifteenth-century vestiges of precise visioning that necessarily operates on a set of assumptions that people are one-eyed, motionless, and fix their sight in the distance on an artificially straightened horizon line.

During the Renaissance, landscape was portrayed as a backdrop of nature held captive within the frame of a window serving as the portal connecting the architectural division between interior and exterior environments. In such claustrophobic framings, landscape was rendered at a scale diminutive to human figures after playing out religious narratives in the foreground. A master painter was measured according to their mastery of perspective, which enabled a rigorous ordering of space, essential in creating a convincing illusion of reality.

This paradigmatic conception of space would receive its most insistent challenge by the aerial perspective, whose more pronounced entrance into visual culture occurred during WWI and WWII. In the view from above, the horizon line is obliterated, the viewpoint seems disembodied and the landscape ordered according to an abstract rather than a mathematical logic, in the absence of references to indicate scale and a recession of space that previously aided in a sense placement of the viewer. This top-down view and the characteristics that describe it is now the dominant perspective through which landscape is imaged and subsequently understood.

Landscape painters of the Northern tradition in the sixteenth and seventeenth century chose to subvert the ordered view with a more “all-over” organization involving clusters of macro-

¹⁵⁹ Celeste A. Brusati, “Perspectives in Flux: Viewing Dutch Art in Real Time,” *Art History* (Vol. 35 No.5, 2012), 912.

narratives in the composition. With such approaches and the adoption of the semi-aerial “world landscape” view by Flemish and Dutch sixteenth century painters such as Bruegel and Patinir, identified landscape as a subject in its own right, rather than a background for narrative.

In the Judeo-Christian tradition, the aerial perspective is associated with the “eye of God,” an all-seeing viewpoint that controlled the world’s formation and cast judgment upon its actors. One of the most important results of this view, says Paula Amad, was its capacity to read and shape the world-as-face, a trope found in the book of Genesis.¹⁶⁰ The fact that the world is here imagined as a face provides an ongoing tension, in terms of human embodiment and its figuring (or capturing) in the context of surveillance, of fear of man to look upon the face of God, whose features remain indistinguishable from his privileged and distanced viewpoint.¹⁶¹

The aerial perspective, although now ubiquitous, is not novel to this century—it has been used by landscape artists throughout many historical periods, via imaginary projection, even before technology allowed humans to take flight and witness the world from above. Creating some of the earliest known landscapes that privileged landscape as a primary subject, Netherlandish painter Joachim Patinir is credited as the pioneer of the “world landscape.” A translation of the German *Weltlandschaft*, world landscapes are fantastic panoramas assembled of discrete topographical features both real and symbolic, such as waterways, lowlands, and mountains, seen from an elevated viewpoint (see Fig.7 for example).

The diminutive scale of human figures to their environment reveals a reversal in the role of landscape as background to narrative—for Patinir, these “nominal subjects are mere pretexts

¹⁶⁰ Paula Amad. “From God’s-Eye to Camera-Eye: Aerial Photography’s Post-Humanist and Neo-Humanist Visions of the World,” (*History of Photography*, 36:1, 2012), 66- 86.

¹⁶¹ Ibid.

for the development of landscapes that are the true protagonists.”¹⁶² World landscapes generally depicted a biblical or historical narrative that seemed organized according to features of the landscape. Patinir’s *Landscape with Charon Crossing the River Styx* (Fig. 7), which depicts the classic tale of the ferryman Charon transporting a human soul across the Styx is an example whose iconography draws on both classical and biblical sources, with the presence of angels in the region of the painting depicting a Christian Heaven, while Charon and the multi-headed dog Cerebrus, reference Greek mythology.

The aerial prospect through which Patinir has rendered the composition, creates a position of omniscience for the viewer who shares in the God-like elevation granting them perfect legibility and visibility of the world below, and targeting the point between good and evil. This all-knowing view contrasts with the limited view of the human soul in Charon’s boat being ferried across the Styx. Yet, according to the tales by Dante and Virgil, it is via this reduced knowledge of the world that permits the boat’s passenger but a peripheral view of the opposing shorelines that he must choose his destination upon the moment of death. The Museo del Prado, where the painting resides, proposes that in choosing to paint the scene with Charon “midpoint between the channels opening to either side of the Styx [and] in positioning the soul in strict profile, with the face and body turned towards the easy path to perdition [...] the choice has been made.”¹⁶³

Patinir’s relatively small landscape paintings were generally organized according to a horizontal format, which set the precedence for what is now commonly known as “landscape” format. This horizontal logic marked a distinct change in the organization of pictorial space, as prior to 1520, says Christopher Woods, “portable panel paintings were almost always vertical in

¹⁶²“Joachim Patinir,” *Museo del prado*, accessed Aug. 26, 2021. <https://www.museodelprado.es/en/the-collection/artist/patinir-joachim/f29b6144-6e38-42f4-95b4-a7f948a5039a>

¹⁶³ Ibid.

format,” making Patinir's landscapes “among the first small horizontal panels of any sort.”¹⁶⁴ Typical of Patinir’s landscapes was the use of three base colours to articulate recession, with brown in the foreground, blue-green in the middle zone, and blue in the distance.

Landscape with Charon Crossing the River Styx is remarkable in its application of this triad colour progression as it vertically ordered and used to symbolic rather than spatial ends. Moving from the brown on the viewer’s right-hand side (depicting Hades) to the blue-green of the river, and blue on the left (Paradise), the overall order of the canvas highlights a vertical logic divided into three fields. Adding to the weight of the darkened left side of the canvas is the presence of an architectural structure that imposes a rare vertical pictorial signature in an otherwise rolling landscape. The fortress, whose rooftop scene reveals tiny bodies overhanging or struggling with demons, acts as point of reference from which a vertically ordered drama unfolds skyward in the background signalled by the ominous bursts of firelight that escape the grey-black shadows of ruins and oppressive plumes of smoke and cloud.

According to Svetlana Alpers, Patinir’s world landscapes were significant as perspectival exercises in that before the invention of mathematics, they most closely approximated a Ptolemaic grid, whose principles Mercator applied in the formation of cartographic projection. The difference between a Renaissance perspective grid and a Ptolemaic grid, despite their sharing of mathematical unity is that the latter projection does not assume a fixed viewer, rather it is “viewed from nowhere.”¹⁶⁵ In distinction from the order of Renaissance perspective which references

¹⁶⁴ Christopher Wood, *Albrecht Altdorfer and the Origins of Landscape* (Chicago: University of Chicago Press, 1993).

¹⁶⁵ Svetlana Alpers, *The Art of Describing: Dutch art in the seventeenth century* (Chicago: University of Chicago Press, 1983), 138. Ann Jensen Adams writes that art historians often claim Holland of the seventeenth century as the origin of the “so-called naturalistic landscape” by juxtaposing a Flemish sixteenth century world landscape such as Patinir’s *St. Jerome in a Landscape* with an early seventeenth-century Dutch naturalistic vision, such as Pieter Molijn’s *Dunescape with Trees and Wagon*. Ann Jensen Adams, “Competing Communities in the ‘Great Bog of Europe’: Identity and Seventeenth-Century Dutch Landscape Painting,” in W.J.T. Mitchell (Ed.) *Landscape and Power*, Chicago: University of Chicago Press, 2nd ed, 2002.

cartography, says Alpers, “the northern painting is like the map as the Albertian picture is not.”¹⁶⁶ Alberti’s picture “begins not with the world seen, but with a viewer who is actively looking out at objects—preferably human figures—in space,” whose presence functions as a metric of distance from the viewer.¹⁶⁷

As such the painting becomes both a land to be travelled and the map to guide the voyage; the landscape features are both the signifiers and the signified. In reference to the satellite images, there is some similarity in which a rather meagre selection of features was used as a signposting. Thus the image acts more as allegorical guide than a cartographic map; this was an imaginary elsewhere adorned with features to guide a prescribed narrative. Similarities of this dual formula of landscape and mapwork can be found in the operation of the satellite images of Taji, whose signposting contributed to a greater narrative that situated the war on terror in the abyss of the unknown.

The notion of the abyss and the hero’s stance in the face of it is a classic trope of the Romantic era. This period found great aesthetic inspiration in Edmund Burke’s *Philosophical Enquiry into the Origins of Our Ideas of the Sublime and the Beautiful* (1756), where contrasts of elevation play significant pictorial roles in the organization of space, with height in the extreme being associated to the sublime, a concept of nature that was infused with divinity, and produced overwhelming and fear-inspiring experiences. Within these mountain-top views, is something of the “prospector’s” spirit – a way of seeing space invested with an intention to conquer and exploit. This conquering attitude is characteristic of Mitchell’s conception of the dark side of landscape, the dreamwork of imperialism, with the aerial perspective and all the superiority suggested within, very much associated with imperial domination.

¹⁶⁶ Alpers, *The Art of Describing*, 138.

¹⁶⁷ *Ibid.*, 41.

Joseph Leo Koerner, a specialist on art of this period, in particular that of German Romantic painter, Caspar David Friedrich describes how Novalis, a late-eighteenth-century German poet and philosopher, defined “romanticizing” as a “qualitative potentializing” that equated Romanticism with the “world-book.”¹⁶⁸ Novalis proclaims, “By the extravagance of its aim” and through the alternation of “elevation and abasement” this quality attained “an enigmatic grandeur.”¹⁶⁹ Koerner finds in many of Friedrich’s landscapes, particularities that make the space depicted in it quite “unfamiliar,” such as, blurred boundaries, neutral colour, nebulous shape which “render the space radically indefinite”¹⁷⁰ — qualities that can also be found in contemporary aerial images. It is all this spatial uncertainty and the frequent lack of human reference within Friedrich’s composition that Koerner believes disconnects the viewer from landscape. These circumstances thereby invite the viewer to create a narrative that imagines how a traveller may arrive, for example, before a nondescript patch of tree and snow, and why it is that one would stop to consider such mundanity: “To the viewer, meaning is merely indicated, never confirmed [...] the particular content of such plots or allegories are less important than their felt presence within your experience of the canvas.”¹⁷¹ This logic might be extended to how the viewer experienced the satellite images at the time of their U.N. presentation, which through the emotion conveyed in Powell’s speech became imbued with suggestive rather than conclusive significance. With the works of Friedrich in mind, it is possible to question the disconnect that a viewer of contemporary aerial photographs might experience with the landscape, which permits an openness to authored cultural narratives that cater to specific agendas.

¹⁶⁸ Joseph Leo Koerner, *Caspar David Friedrich and The Subject of Landscape* (New Haven: Yale University Press, 1990), 31.

¹⁶⁹ Ibid.

¹⁷⁰ Ibid., 10.

¹⁷¹ Ibid., 12.

Friedrich's *Wanderer Above a Sea of Fog* (c.1818) (Fig.8) can be seen as a quintessential German Romantic example of the melancholic wanderer pausing on a mountaintop to struggle with the notion of self while facing into the abyss or sublimity of nature. Knowing that the back-facing figure (the so-called Rückenfigur) was a member of the military, encourages another reading of the gaze the viewer is expected to share—one that resonates strongly with Mitchell's concept of landscape views being predominantly imperialistic. As in the Patinir works, *Wanderer Above a Sea of Fog* is also articulated by morphological echoes of vertical elements, as the Rückenfigur's vertical assertion in the foreground is responded to in the mid- and background by rocky outcroppings.

Typical of Friedrich, there is no firmly established horizon line, its absence used as a constant lure into an abyss that is both intriguing and potentially menacing—a classic signature of the Romantic sublime. The only distinct horizontal register that is present in this canvas occurs in the sky, and even to call this distinct may be an overstatement. Also, unlike the Northern world landscapes, there is no sense that *Wanderer Above a Sea of Fog* is divided into vertical fields—the composition feels both global and singular. It could perhaps be said that *Wanderer above a Sea of Fog* is also about perspective, one that was representative of the “pioneering spirit” of the Industrial Revolution, while foretelling a future whose skies would be filled with satellites looking down and reading the landscape according to scripts written by vertically ordered powers—a militarized way of seeing that finds specific examples in the satellite images taken at Taji, Iraq in 2002. The manner in which the slopes obscured by a moody atmosphere run towards one another in the middle ground privilege the wanderer's dominance over the scene, assert that this world view is centred around man. The way that Friedrich frustrated the foreground here with the figure

obstructing the panorama, as he does in other canvases employing lower viewpoints such as *Hut in the Snow* (Fig. 9), amplifies that sense of anxious unknowing associated with the sublime.¹⁷²

In a tradition similar to that of Patinir, sixteenth-century Netherlandish painter, Pieter Bruegel the Elder, painted landscapes from a perspective that art historians identify as more avian than mountainous.¹⁷³ Among the most celebrated of Bruegel's works, *Landscape with the Fall of Icarus* (1558) (Fig. 10) has been observed to be, among other things, a painting about perspective.¹⁷⁴ As the title suggests, the piece depicts the plunge of Icarus into the sea after his trajectory has brought him too close to the sun so that a confluence of pride and flame arrest his apex of flight and return him earthward. As such Bruegel's *Icarus* is an example of how art can subvert the dominant ideological/visual paradigm, which is to say, it critiques the scopic regime.

Rather than situate the drama centrally, Bruegel envelops the narrative within an environment so concerned with its own quotidian mechanics that it appears oblivious to the protagonist's fate. The ploughman who occupies the foreground continues to cut the earth, something skyward holds the attention of the shepherd tending his flock perhaps rather curiously positioned on cliff edge, and the angler, the personage nearest the scene, busies himself with his catch.

In the water not far from shore is a ship that reveals several small figures — many with backs turned in maritime labour, while one who climbs the ship's rigging facing the scene, may be the only small uncelebrated witness to the fall, within the frame of the painting. Almost all activity occurs at the boundary of one place to another — the field, to the cliff, to the water's edge,

¹⁷² It could be that the grid work of horizontal and vertical registers -the defining register of mapping projects, provided a pictorial security of space, and without them, there is a kind of "sublime" psychological discomfort. It might also explain why the landscapes typically described as sublime are often homogenous: a vast seascape that fades to an uncertain horizon line, or the view of a valley below whose perspectival height flattens the features of the ground below.

¹⁷³ Simon Schama, *Landscape and Memory* (New York: A.A. Knopf, 1995), 431.

¹⁷⁴ See Karsten Harries, *Infinity and Perspective*, (Cambridge: MIT Press, 2001).

to the sea. These liminal spaces take on a static calm and lead the viewer rather casually towards the only discernible movement in the composition, suggested by way of ripple and foam as Icarus opens the water in his fall in the quadrant to the lower right of the viewer.

In *Landscape with the Fall of Icarus*, the pictorial momentum pushes diagonally out of a corner of the canvas and spans out from shallowly terraced tan-coloured steppe in the bottom left corner towards the jagged blue-white mountain range in the upper right. Likewise, the vertical registers are used as a kind of syntax across vertical space, with the man at the plough, the ship in the water, and the distant mountain range aligning to form a topographical vernacular that weights the right side of the canvas. This signposting leads the eye from foreground to background while emphasizing a paradoxical trend of spatial organization utilized by Early Northern painters that orders horizontal landscapes (that is spaces defined by horizontal axes, such as plains and hillocks) according to vertical logic, where the composition as a whole is divided into vertical fields, each of which is distinctly encoded by a colour hue or with more or less vertical signatures.

While the right side of the canvas of Bruegel's *Icarus* is weighted with the syntax of figure-ship-mountain, the left hand mimics a similar phrasing as the ox communicates with the island fortress towards a ship in the distance whose shape is reflected by atmospheric accoutrement on the horizon line. With both axes pushing out from sources only a few degrees divided (a phenomenon that the hovering viewpoint makes visible) there is a distinct impression of regression, that space is moving away from the viewer in a way not controllable. This lack of control is partly attributed to the rejection of rules defying Renaissance perspective, as Karsten Harries observes, "The scale jumps in ways Alberti would not have tolerated, the space falls as

apart as we explore the painting: its center will not hold. [...] we cannot easily get from one such scene to the next.”¹⁷⁵

Unlike Alberti’s perspectival construction that uses a center-point that “offers the painter a spatial matrix in which whatever objects he chooses to represent can be located.”¹⁷⁶ Bruegel here organizes space so that multiple narratives occur in proximity but refuse to share or cooperate in a singular perspective. As such, the individuals in the painting remain isolated in their own proximal knowledges. Bruegel, in simply allowing for a privileging of multiple voices demonstrates how *Icarus* is not a space organized according to Renaissance perspective, from a fixed standpoint, and based on monocular conception of seeing – a view that would essentially permit one story, which through authority is often deemed *the* story. The influence of Alberti’s *De Pictura* is widely known, in its encouragement of new pictorial devices over the course of the fifteenth century from medieval principles in the earlier part of the century in which paintings did not so much narrate but summarize a biblical story. At this point, the relation between characters was largely a symbolic one, and the story they told was achieved through implication, while their meaning decoded through the already established familiarity of the audience with the story and their exposure to conventionalized earlier representations.¹⁷⁷

“And what of Icarus?” one might ask, similarly to “What of weapons of mass destruction?” Bruegel here offers an exemplary exercise in producing space in which the relationships between the topographic, the human, and the architectural are symbolically described and decoded according to an interpretation of a visual vernacular that often points away from as much as towards centralized subjects. In the case of Brueghel’s landscape, Icarus, the story’s supposed

¹⁷⁵ Harries, *Infinity and Perspective*, 98.

¹⁷⁶ *Ibid.*, 78.

¹⁷⁷ Rudolph Fuchs, *Dutch Art*, (London: Thames and Hudson, 1978), 9.

protagonist, is nothing more than two legs protruding, whose end will go unobserved for lack of pictorial celebration and cartographic guidance to grant him the warranted attention. Powell, less a master of space than Brueghel, did with words what the artist did with paint. That is, he used topography and architecture — an accumulation of lines in a defined parameter of space as signposts towards the unseen and unknown, which harkens another important episode in the projection of world views, that of the Romantic period.¹⁷⁸

Looking Back at Seeing from Above: Reading Powell's U.N. Presentation Today

In the interval between Powell's 2003 presentation and the writing of this chapter in 2021, much critical attention has been paid to both the content of the speech and the images used to support it. The retrospective analysis points repeatedly to the unreliability of key evidence and lack of precision in terms of sources, while commentary immediately following the presentation often focused on the quality of the presentation itself, with one analyst describing it as “wonderful.”¹⁷⁹ That Iraq did not possess weapons of mass destruction was established in the Iraq Survey Group's interim progress report released in October 2003, but some sixteen years after the beginning of the Iraq War, in 2019, questions remained as to whether Bush lied or whether his intelligence failed him.¹⁸⁰ On March 22, 2019, which marked the war's anniversary, the former Bush Administration Secretary Ari Fleischer tweeted that “The Iraq war began sixteen years ago tomorrow. There is a myth about the war that I have been meaning to set straight for years. After

¹⁷⁸ As such Powell was harnessing landscape in the terms of Mitchell's “dreamwork of ideology,” while instructing viewers in an exercise, of what Walter C. Scott defined as “seeing like a “state,” thereby creating of a selective reality of strategic benefit.

¹⁷⁹ Hannity and Colmes Segment of Fox News in “Decade After Iraq WMD Speech at UN, Ex-Powell Aide Lawrence Wilkerson Debates Author Norman Solomon.” Democracy Now, Feb. 6, 2013. <https://www.youtube.com/watch?v=iDnMopHZWzI>

¹⁸⁰ J.D. Maddox, “The Day I Realized I Would Never Find Weapons of Mass Destruction in Iraq,” *New York Times*, Jan. 29, 2020. <https://www.nytimes.com/2020/01/29/magazine/iraq-weapons-mass-destruction.html>

no WMDs were found, the left claimed ‘Bush lied. People died.’ This accusation itself is a lie. It’s time to put it to rest.”¹⁸¹

Whether or not Bush lied or was misinformed, Powell’s description of these architectures as being silos of weapons of mass destruction, which ultimately proved to be false showed the potential of manufactured truth. Powell’s presentation of the satellite images at the U.N. Security Council meeting in 2003 was a sensational showcase of the imperial power of remote visioning that permits foreign landscapes to be imaged, and the photographic documents to be subsequently interpreted according to geopolitics in a practice of “seeing like a state.” Greater than the subjects represented within their frames, the significance of the images that they served as a premonitory case study that demonstrated the productive potential of the mediated image at a stage when digital culture was in a nascent stage. Widely televised, the presentation, combined with images of the war in Iraq hinted at the transformative power held within the momentum of digital circulation within an increasingly vast and connected media landscape. As such they operate as harbingers of the oncoming disinformation ecology that would become increasingly sophisticated as imaging technologies advanced.

¹⁸¹ Tweet by Ari Fleischer (@AriFleischer) March 22, 2019.

Chapter 2: Visibility and Invisibility

Carrying a camera was more dangerous than carrying a weapon'. Waleed Al-Wafal¹⁸²

Douma: The Chemical Attack that “Didn’t Happen”

On April 7, 2018, the Assad regime of Syria launched a chemical attack on Douma, a small city in Eastern Ghouta, which left dozens of people dead and incited U.S.-led strikes six days later inside Syria. To this day, Syrian officials and their Russian allies deny that the attack took place, claiming, contrary to the video and photographic evidence that proved otherwise, that there were no dead bodies found. The narrative according to the Syrian and Russian governments was “simply that there was no chemical attack at all,” a position they defended at an Arria meeting of the UN Security Council.¹⁸³ Syrian and Russian officials compared the event to a “theatre,” “a scene from a Hollywood movie;” or as President Bashar al-Assad dismissively summarized “a farce,”¹⁸⁴ going so far as to suggest that the dead bodies witnessed in the videos and photographs shared on social media sites such as Twitter, directly following the attack, were brought in by rebel forces as a macabre staging. In a televised interview, faced with allegations that he was responsible for the attack, Assad replied, “where is your concrete evidence about what happened?”¹⁸⁵

According to the *New York Times*, the intensity of repetitive shelling, incendiary attacks, and bombing in Douma on that day and the day prior paralyzed the city, making it impossible for

¹⁸² William Christou, “10 years on, Syrian Activists Remain Resolute,” *The New Arab*, March 15, 2021. <https://english.alaraby.co.uk/english/indepth/2021/3/15/10-years-on-syrian-activists-remain-resolute>

¹⁸³ Bellingcat, “Douma Leaks Part 3: We Need to Talk about a False Flag Attack,” January 23, 2020. <https://www.bellingcat.com/news/mena/2020/01/23/the-opcw-douma-leaks-part-3-we-need-to-talk-about-a-false-flag-attack/>

¹⁸⁴ “How the Times Makes Visual Investigations,” *New York Times*, Streamed live on YouTube, Feb. 14, 2020, <https://www.youtube.com/watch?v=reTUXfQsSUQ>

¹⁸⁵ Ibid.

medical workers to mobilize.¹⁸⁶ Buildings were destroyed one after another on the particular street on which the chemical bomb was dropped, and the apartment building that was targeted is thought to have been chosen for its proximity to an entrance to a tunnel that led to the last remaining underground hospital in the city. This method of urban attack is a signature of the Syrian War and is a standard of counterinsurgency tactics, which seeks to establish tight control on cities in a bid to isolate them from outside assistance.¹⁸⁷ Such strategies, which are meant to divide, destroy and depopulate are radical examples of what Laura Kurgan calls “conflict urbanism” whose violence “makes, unmakes, and remakes urban spaces.”¹⁸⁸

Conflict urbanism according to Kurgan is about “justice as a general category and about the inequalities—visible and hidden—that structure cities today.”¹⁸⁹ Conflict urbanism in the context of Syria gives extreme example of the structural inequalities of cities, as the Syrian regime has systematically targeted basic urban infrastructures to cripple the civilian population by depriving them of basic necessities such as food, water, fuel, healthcare and education. Urban terrains tend to design warfare in profoundly vertical ways as military operations contend with the interference of architectures such as apartment buildings, which affects modes of attack and makes the aerial perspective particularly advantageous. In turn, aerial bombardment redesigns cities by pushing infrastructures such as hospitals and communication hubs underground in an attempt to make these essential sites and services invisible from the air so as to not be targeted.¹⁹⁰ The way in which the aerial perspective and aerial violence forces life below the surface describes an acute form of conflict urbanism in which power reorders cities according to a vertical logic and the

¹⁸⁶ New York Times Visual Investigations, “How Bashar al Assad Gassed His Own People,” June 25, 2018.

¹⁸⁷ Nick Waters, telephone conversation with author on March 26, 2021.

¹⁸⁸ Noah Chasin, “Laura Kurgan by Noah Chasin,” *BOMB Magazine*, Dec. 15, 2016, <https://bombmagazine.org/articles/laura-kurgan/>

¹⁸⁹ Ibid.

¹⁹⁰ Ralph Peters, “Our Soldiers, Their Cities,” *Parameters*, Spring, 1996: 6.

notions of visibility and invisibility take on a complex range of meanings. For those living in conflict zones exposure can be deadly, and invisibility becomes a strategy of survival. However, invisibility can also be a mode of marginality, or the mark of definitive absence of death or displacement.

The Douma attack on April 7, 2018 represents just one of over 349 chemical attacks that have been verified over the past decade in Syria by the Global Public Policy Institute, a Berlin-based human rights research group.¹⁹¹ The victims of that day amount to a small portion of the 400,000 people killed since the war in Syria began in March of 2011, making it the greatest conflict-derived death toll since the Second World War.¹⁹² The conflict is also a profoundly vertical one as detailed reports by Global Public Policy Institute (GPPI), reveal that the Syrian Air Force (SyAAF) has served as the Syrian government's primary means of inflicting violence and suffering on civilians in opposition-held communities:

According to the Violations Documentation Center, at least 34,000 Syrians have perished in air attacks involving conventional munitions, including barrel bombs containing high explosives. Hundreds of thousands more have been injured, driven from their homes and psychologically scarred from the years of near-constant bombardment. As frontlines hardened across the country, the SyAAF grew into the strong arm of the Assad government's military campaign.¹⁹³

Aerial violence has exacted a significant toll on Syrian children—a 2020 United Nations Office for the Coordination of Humanitarian Affairs (OCHA) report found aerial attacks and the use of barrel bombs by government forces and indiscriminate shelling and improvised explosive device attacks by armed groups, to be the primary cause of death and injury among Syrian

¹⁹¹ GPPI is an independent non-profit think tank based in Berlin, whose mission is to improve global governance through research, policy advice and debate. <https://www.gppi.net/about>

¹⁹² Council on Foreign Relations, <https://www.cfr.org/global-conflict-tracker/conflict/civil-war-syria>

¹⁹³ Tobias Schneider, Emma Bapt, Karam Shoumali, "Assad's Long Reach," GPPI, Last accessed Aug. 26, 2021, <https://chemicalweapons.gppi.net/analysis/assads-long-reach-syaaf-pt-1/>

children.¹⁹⁴ Constant and deadly air strikes have served as an enduring strategy of the Syrian regime, which has forced 5.6 million refugees to flee the country and internally displaced another 6 million.¹⁹⁵ The greater landscape of Syria has therefore also been reordered according to vertical power, which has destroyed homes, infrastructure, cultural institutions, and caused significant environmental damage affecting water, air, and soil quality.

Aerial perspectives have long been established as the superior strategic visual paradigm in the context of war and is now a ubiquitous way of framing landscapes in more generalized contexts, as aerial technology becomes more publicly accessible. However, given the complex genealogy of aerial photography whose most significant advancements were propelled by the First World War, it needs to be asked what legacies are held within this viewpoint what effect they have on the landscapes visioned from this perspective. Along with historicizing the emergence of aerial perspectives, the technologies must also be accounted for in terms of how they continue to be adapted, recycled, or advanced, as they are not only invested in visual ordering, but contribute to epistemological organization as well.

Vertical hegemonies, as Parks has made clear, are prevalent in a globalized world articulated by aerial and spatial technologies. In the context of war, aerial perspectives enacted by such technologies serve essential strategic roles in reconnaissance and attack, however, these perspectives are also invaluable to investigative practices for the overview they offer, which helps

¹⁹⁴“Despite widespread perceptions that the conflict has been drawing to a close, it continues. In the North-West of Syria, the current epicentre of the violence, children are particularly vulnerable. 2018 was the worst year of the conflict for Syria's children according to UNICEF, with 1,106 killed in fighting. This is reflected in AOAV's data on the use of explosive weapons in Syria, which also shows 2018 to be the deadliest year thus far. This high level of casualties continued into 2019: the UN Secretary General reported 1,454 child victims, including 897 killings of children. The vast majority of these casualties were from explosive violence: 515 from air strikes; 332 from shelling; 301 from unexploded ordnance; and 165 casualties from attacks with improvised explosive devices.” William Grant-Brook and Verity Hubbard, “The Impact of Explosive Weapons on Children in Syria,” Oct. 16, 2020, <https://reliefweb.int/report/syrian-arab-republic/impact-explosive-weapons-children-syria>

¹⁹⁵ Council on Foreign Relations <https://www.cfr.org/global-conflict-tracker/conflict/civil-war-syria>

to place features of a particular landscape within a greater context. Aerial perspectives, in communication with other perspectives and understood on the level of machine and material are not limited to disembodied distant views that abstract and erase details. As aerial lexicons become more sophisticated and human ways of seeing learn to acknowledge and account for the invisible landscapes of machine vision, new information is made possible and new potentials for seeing from above emerge.

Informed by Eyal Weizman's "threshold of detectability," which he defines as "things that hover between being identifiable or not,"¹⁹⁶ this chapter will use the chemical attack in Douma on April 7, 2018, as a case study to examine its subsequent interpretations, investigations, and representations, which will expose the aerial perspective as a key function in both elucidating and obfuscating details. This analysis, and indeed my research as a whole is greatly indebted to the British-Israeli architect Weizman and his interdisciplinary research group, Forensic Architecture, which uses architectural theories, new media technologies, and crowdsourcing to challenge state-driven accounts of cases that involve violence and abuses of human rights.¹⁹⁷ Their practice is informed by the recognition of the materiality of images and the machinery of their making, be it analogue or digital, which asserts that an image not only represents reality, but is "simultaneously image and presence" and therefore must be studied on both of these levels.¹⁹⁸

With materiality and mediation in mind, this chapter will be attentive to the potential slipperiness or failure of photos as evidence. The chapter will also investigate the exploitable articulations of media technology, and the inequality of state and civilian technology capabilities, which produces dissonant narratives. In the state-produced version, narrative tends to be invested

¹⁹⁶ Weizman, *Forensic Architecture*, 20.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid.

in the singular as it relates to authority, while the resistance of counter-narratives depends on and is activated by the multiple, the collective. This analysis will therefore look at the intersections of physical and digital worlds to examine the ways in which they can either interfere or collaborate with truth-making efforts (i.e., building a comprehensive picture of “what happened”).

Using the case of Douma, I will show how visual investigations are now contributing to a new range of imagery to contemporary visual culture. These investigations that work towards transparency and accountability, come accompanied not only with sociocultural readings, but also with pragmatic and technical instruction about how to look at images on material and technical levels. As open-source and visual investigation practices become more popular, the images that they produce and parse make important contributions in terms of the visibility/invisibility problem in contemporary visual cultures. Here, these practices become increasingly vital, as relationships between truth and representation continue to be destabilized by digital technologies that permit the manipulation, decontextualization and synthetic production of images.

The Visible and Invisible in Contemporary Art

Contemporary artists are also engaging with issues of visibility and invisibility and contributing to a visual culture that has witnessed major transformations in the advent of digital media and machine learning technologies. “Human visual culture,” says artist and self-proclaimed “experimental geographer”¹⁹⁹ Trevor Paglen, “has become a special case of vision, an exception to the rule. The overwhelming majority of images are now made by machines for other machines,

¹⁹⁹ Trevor Paglen has a Ph.D. in Geography (University of California, Berkeley) and coined the term “experimental geography” to describe intersecting practices of experimental cultural production and artmaking, which involve theories of critical human geography regarding the production of space and materialism. See contributions by Paglen in Nato Thompson, *Experimental Geography: Radical Approaches to Landscape, Cartography, and Urbanism*, (New York: Melville House, 2009).

with humans rarely in the loop.”²⁰⁰ This “big data” shift itself seems to have taken place at imperceptible levels as Paglen argues that many people do not understand that machines have now usurped humans in the cycle of visual culture that involves image production, interpretation, categorization and circulation.

While much critical attention has been directed at the impact of spatial technologies such as satellites on the global information economy and by extension on visual culture, another revolutionary change occurred with the advent of digital images as the dominant photographic mode. Like satellite images that require a series of interventions to render data into a visual document, digital images, explains Paglen, are foundational in the machine-machine loop of contemporary visual culture in that they are “fundamentally machine-readable: they can only be seen by humans in special circumstances and for short periods of time.”²⁰¹ As an example, Paglen describes the precarious materiality of a photograph shot on a smartphone, which “creates a machine-readable file that does not reflect light in such a way as to be perceptible to a human eye.”²⁰² While, “a secondary application, like a software-based photo viewer paired with a liquid crystal display and backlight may create something that a human can look at, but the image only appears to human eyes temporarily before reverting back to its immaterial machine form when the phone is put away or the display turned off.”²⁰³ The fact that a significant aspect of visual culture exists at a level of invisibility and ephemerality specific to the digital realm goes relatively unnoticed or unknown. And disturbingly, when this paradigm is revealed to those now dependent on digital technologies, all too often these invisible registers become an accepted (if not reticently)

²⁰⁰ Trevor Paglen, “Invisible Images (Your Pictures are Looking at You),” *The New Enquiry*, Dec. 8, 2016, <https://thenewinquiry.com/invisible-images-your-pictures-are-looking-at-you/>

²⁰¹ Trevor Paglen, “Invisible Images.”

²⁰² Ibid.

²⁰³ Ibid.

characteristic of contemporary relationships between humans and images in environments dominated by machine-machine interactions.

Paglen argues that the world of machine-seeing and invisible images has implications for the society at large, and that conventional visual theory is not capable of understanding or articulating unseen-image landscapes. Speaking to the domain of art, he argues that the process of establishing a more accommodating visual theory is still uncertain, but that it will undoubtedly require artists to train themselves to see like machines and leave their human eyes behind. As such, explains Paglen, a paradox ensues: “for those of us still trying to see with our meat eyes, artworks inhabiting the world of machine-seeing might not look like anything at all.”²⁰⁴ An example of such nebulous representation is the body of work that Paglen produced using artificial intelligence, which he trained to see narrowly defined features and then represent this categorized catalogue pictorially. Included in this collection is the *Aftermath of the First Smart War* (2017) corpus, a series of images composed of photographs documenting the aftermath of the first Gulf War. Here, Paglen used artificial intelligence that was trained to see a “landscape characterized by burning oil fields, desertification, depleted uranium, birth defects, and other effects of the war”²⁰⁵ to produce an image that appears more painterly than photographic. In *Highway of Death* (Fig. 11) as part of the series, are vestiges of a sublime landscape stratified according to degradations of colour that sometimes smear, and in those moments recall something of Rothko. A horizon line that divides the flat grey sky from the pale beige ground rippled with shadow suggests a synthetic texture that helps the viewer to identify this as a landscape, while splashes of bright red in the centre foreground

²⁰⁴ Paglen qtd in Julia Bryan-Wilson, Lauren Cornell, Omar Kholeif (Eds.) *Trevor Paglen*, (New York: Phaidon, 2018), 140.

²⁰⁵ Alexander Strecker, “An Urgent Look at How Artificial Intelligence Will See the World,” *Lens Culture*, Last accessed Aug. 26, 2021.

<https://www.lensculture.com/articles/trevor-paglen-an-urgent-look-at-how-artificial-intelligence-will-see-the-world>

give the only suggestion of activity in the muted environment. This is but one image in a collection Paglen created for an exhibition titled *A Study of Invisible Images* (2017), in which he used AI to create a series of composite images that awkwardly participate in the Western traditions of landscape and portrait. Through this project Paglen reveals the methodology that underpins AI-produced images, which makes them navigations of invisible landscapes themselves, whose orderings are taking place at the “back end” of machines, with the “front-end” images produced by algorithms of which even the engineers who designed them have limited understanding.²⁰⁶

Artist Hito Steyerl complements Paglen’s argument regarding what is at stake in an increasingly mediated reality and the shifts that have occurred in the emergence of the digital images. Extending the thinking of Czechoslovakian philosopher, Vilém Flusser, who in the 1990s proclaimed that images or cameras no longer record a pre-existing reality but co-create a new or future reality, Steyerl sees them as instruments and documents that predict and produce idealized states.²⁰⁷ As such, she says that images are increasingly becoming models of what reality “should” look like, while contributing statistically to the standards around which these predictive idealized computer-generated futures are formed. Like Paglen, she uses the simple example of the photograph taken by a smartphone to explain how this image becomes automatically implicated in a system of auto-correction, similar to how language is corrected in the course of its production when an individual sends an SMS on their cellphone. When a portrait of an individual is taken, the technology built into smartphones anticipates the orientation of correction towards paler, clearer skin and brighter lighting. Such adjustments represent the kind of bias that is built into the algorithms that effectuate such “improvements” and the societal (white) standards around which

²⁰⁶ Ibid.

²⁰⁷ Centre Pompidou, “Hito Steyerl: Les images n’enregistrent plus une réalité préexistante, mais cocréent une réalité à venir.” Last accessed August 26, 2021.

they have been formed. These touch-ups, Steyerl explains, effectively eliminate the trace of time and adapts the individual to resemble the platonic ideal of the human and as such serves as a social projection.²⁰⁸

Steyerl describes this predictive function of algorithms that adapts images according to presumed societal ideals while controlling the visibility of them in public digital domains as “social choreography.” In her recent artwork *SocialSim* (2020), Steyerl and her artistic team question the underlying rules that affect societal behaviour, notably how algorithms hold significant influence in the simulations of future movements. Predictive technologies are of primal concern in this work, along with “machine learning, technology and law, power relations, intervallic space, and planetary concerns that span from communication to environmental realism.”²⁰⁹ Steyerl likens this instructive power of algorithms which is happening at imperceptible levels to the Fluxus movement in which a prescription of commands were given that would produce a particular choreography. In *SocialSim* (Fig. 12), she reverses this methodology by first regarding the collection of movements and expressions within social groups and then attempting to extract the instructions that must have been followed in order for such gestures to have been arrived at. Fundamentally, the images are attempting what she calls the “social physical,” which in a certain capacity is an attempt to “qualify and predict history.”²¹⁰ The recognition of the qualifying and predictive capacities of the digital document is something that concerns visual investigators as well as artists, as the manipulation of facts not only implicates historical records but has consequences

²⁰⁸ Ibid.

²⁰⁹ Noam Segal, “Prediction in the Era of Digital Stupidity: Hito Steyerl,” *Flash Art*, (No.334 Spring, 2021).
<https://flash---art.com/article/hito-steyerl/>

²¹⁰ Ibid.

on future behaviour. As many AI ethicists have warned, machine learning has facilitated a smooth conduit between past and future, carrying with it a legacy of discrimination and injustice.

Laura Kurgan is another artist and interdisciplinary researcher whose work engages with topics of visibility and invisibility as they relate to digital materialities, in a context that is often cartographically informed. Trained as an architect, Kurgan, who leads a research team at the Center for Spatial Research at Columbia University, describes her practice as invested in the ethics and politics of digital mapping and its technologies; the art, science and visualization of big and small data; and design environments for public engagement with maps and data.²¹¹ Like Paglen and Steyerl, Kurgan is attentive to registers of visibility and invisibility in the photographic document as it pertains to truth production. Her research and creation practices are specifically attuned to what she describes as “image-data-evidence connection,” a paradigm in which evidence and data may in fact be one and the same.²¹² For example, the metadata embedded in digital images carries with it a significant evidential signature that contributes a temporal layer to the photograph’s spatial representation. To approach data as evidence reveals Kurgan’s strategy in adapting the new visual theory that Paglen described as being necessary in the machine-machine environment, in allowing data itself to act as a navigation tool to see as machines do.

Serving as one case study for this chapter is Kurgan’s project *Conflict Urbanism: Aleppo* (2015), a two-stage collaborative project developed by the Center for Spatial Research that includes an open-source, interactive, layered map of Aleppo as well as a platform for storytelling using data. Users are invited to navigate the city, mapped at a “neighborhood scale,” via high-resolution before-and-after satellite imagery, and explore geo-located data about cultural sites,

²¹¹ “Laura Kurgan,” GSAPP Columbia University. <https://www.arch.columbia.edu/faculty/195-laura-kurgan>

²¹² Laura Kurgan and Eyal Weizman, “Counter Forensics: Interpretation, A seminar series at Tate Britain with Laura Kurgan,” 2018. <https://vimeo.com/328655041>

neighborhoods, and urban damage. The second aspect of the project invites collaborators and researchers to contribute new perspectives and analyses to the map in an effort to broaden an understanding of the events in Aleppo. Collaboration is a key register that aligns the artistic practices of Paglen, Steyerl, and Kurgan who all work with the support of research groups. Visual investigations are also often performed in teams, as is the case with Forensic Architecture. This teamwork attests to the complexity of understanding images beyond the surface, requiring, a collaboration of specialized knowledges spanning the sciences and humanities.

Specialized knowledges lead to the fundamental acknowledgement that not all images hold the same level of information: satellite images, with which Kurgan frequently works, contain more information than do more colloquial digital photographs. All digital images, Kurgan explains, are embedded with timestamps—a type of metadata that registers the local time at which the image was taken, but satellite images carry an even more precise classification of time and space. One example of such precision data is the classification algorithm known as the normalized difference vegetation index (NDVI), a graphical indicator that detects live green vegetation.²¹³ Kurgan explains how every pixel in a satellite image is a piece of data that has spectral signatures containing information such as longitude and latitude and is formed of multiple layers that can be combined in different ways, the particular combination of which forming the black box of that algorithm, which effectively “supervises” the way an image is looked at.²¹⁴

Image and Investigation

Algorithms also influence the accessibility of images, and as such contemporary publicly accessible video archives such as YouTube are known to operate as “echo chambers.” Particularly

²¹³ “Measuring Vegetation (NDVI and EVI),” NASA: Earth Observatory, Last Accessed Oct. 11, 2021. https://earthobservatory.nasa.gov/features/MeasuringVegetation/measuring_vegetation_2.php

²¹⁴ Kurgan and Weizman, “Counter Forensics.”

effective in cultivating far-right audiences, YouTube’s algorithm leads people into what the *Guardian*’s Paul Lewis described in a 2018 article, as “hateful rabbit holes.”²¹⁵ To keep viewers interested, the site presents videos similar to those previously watched, and the longer the viewer watches, the more extreme, bizarre, and generally violent the videos and the recommendations become. Video producers of American far-right content, savvy to YouTube algorithmic design learned that cleverly editing videos to focus on and sensationalize conflict could help attract millions of views to their platform. Aesthetic techniques are also employed towards dramatic enhancement, such as sharpening the videos’ visual contrast by lightening the whites and darkening the blacks (i.e., making things hyper-visible through distinction). A simple mandate ascribed to former alt-right video producer, Caolan Robertson describes an effective formula that could be applied to a range of agendas: “Focus on conflict. Feed the algorithm. Make sure whatever you produce reinforces a narrative. Don’t worry if it is true.”²¹⁶

Robertson’s strategy reflects what Guillaume Chaslot, a computer programmer who formerly worked for Google and was assigned to work on YouTube’s algorithm observed: “On YouTube, fiction is outperforming reality.”²¹⁷ As such, images and algorithms are working in concert to push viewers towards communities who share their worldviews. Even small amounts of bias are shown to be persuasive, as Luciano Floridi, of Oxford’s Digital Ethics Lab explains that content-shaping algorithms are particularly effective among the irresolute. In such situations, says Floridi, “Gentle, implicit, quiet nudging can over time edge us towards choices we might not have otherwise made.”²¹⁸

²¹⁵ Paul Lewis, “Fiction is Outperforming Reality: How YouTube’s Algorithm Distorts Truth,” *The Guardian*, Feb.2, 2018. <https://www.theguardian.com/technology/2018/feb/02/how-youtubes-algorithm-distorts-truth>

²¹⁶ Cade Metz, “Feeding Hate with Video: A Former Alt-Right YouTuber Explains His Methods,” *The New York Times*, April 4, 2015, <https://www.nytimes.com/2021/04/15/technology/alt-right-youtube-algorithm.html>

²¹⁷ Lewis, “Fiction is Outperforming Reality.”

²¹⁸ Qtd in Ibid.

On the other end of the spectrum, sensationalist tactics form tempting “click bait” for digital citizens, which can even ensnare those not wanting to be complicit in the dissemination of disinformation. For this reason, fake news is known to travel six times faster than real news, and disinformation is becoming a proven tactic of authoritarian regimes. Information Studies researcher Safiya Noble describes how states have weaponized digital platforms by leveraging the inequalities of access to technologies between state and citizens, using them to enact human rights abuses and spread disinformation.²¹⁹ As such, these platforms can be used to bolster certain power structures, while also being capable of disrupting others.

State-owned media agencies are able to control which images, moving or still, appear in public domains with the greatest frequency and even possess the power to erase them from the digital arena. In the case of Syria, the regime has instigated a formidable information war, as the state-run news agency dominates the media platforms, whose content is also widely broadcast in Russia. Images documenting violence are removed from context or written into propaganda and false narratives that deflect the blame. Alternatively, say Mathew Fuller and Eyal Weizman, a “recent technique of war crime deniers is not to seek to remove information, say images, clearly showing their responsibility, but rather to drown these within a flood of other images and information. This is aimed at seeding doubt by generating more information than can be processed”:

After the Syrian Airforce chemical attack that killed dozens of civilians in Douma, near Damascus, on 7 April 2018, Russian media propaganda, aware that incriminating images were already in circulation, sought to create confusion by proliferating many other images related to the incident, aiming to create enough of a smoke screen to deflect from their allies’ culpability.²²⁰

²¹⁹ See Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism*, (New York: New York University Press, 2018).

²²⁰ Fuller and Weizman, *Investigative Aesthetics*, 85.

Such practices are an example of how virtual and physical wars intersect through images. With both physical and digital landscapes in mind, this chapter therefore interrogates the status and abuses of the image as evidence within this machine-machine circuit. Here I am interested in how power is articulated both through visible and invisible means. Following this I seek to investigate how technologies used towards oppression can be reversed to perform acts of justice through providing counternarratives to dominant state-produced narratives that are often promoted as authoritative.

In the case of Douma, numerous organizations have worked singularly or collectively towards the production of counternarratives, in an effort to challenge “official” stories produced and circulated by the Syrian regime, which denies that any chemical attacks have taken place, and if they had, insist they were not responsible for them. The New York Times Visual Investigations Team; Bellingcat, an investigation team that specializes in open-source investigations; and the London-based research group, Forensic Architecture are three such teams that have made consolidated efforts to contest the official narrative of the Syrian regime. Through the collection, verification and analysis of visual evidence, the mandates of these organizations align in their collective approach that relies upon opensource collaboration to challenge singular “authoritative” narratives.

Visual investigations must necessarily take into account the network of humans and machines on which visioning technologies are reliant, recognizing that for every body and space visioned, there are many human agents and agencies who/which remain invisible yet essential to the production of the surveillance, geospatial or aerial image. At work here is a geopolitical logic that contributes to other demographically defined categorizations that are increasingly forming the logic of visioning technology such as surveillance cameras, facial recognition, and infrared

imaging. Drawing upon the collaborative investigative work of the New York Times Visual Investigation Team, Bellingcat, and Forensic Architecture pertaining to the April 2018 Douma chemical attack, and Laura Kurgan’s real-time mapping project using Google Earth, allows me to explore the limits of media and technology, the politics of resolution, and the role of geopolitics as these contribute to the threshold of detectability.

These techno-social networks produce images implicated in what Foucault calls the “microphysics of power”—the “strategies, tactics, techniques and concrete functionings of power.”²²¹ Attentive to visual investigative methodologies, the chapter will consider the material manifestations of the microphysics of power inscribed, for example, on bomb casings, in the rubble of buildings, or on the bodies of victim, and their technological articulations carried through the frequency of airwaves or in the layered assemblage of data. Both physical and digital realms participate in visualizing the histories of events otherwise made invisible by virtue of their passing and can be used towards judicial or strategic ends.

Eyal Weizman, the founder of Forensic Architecture, explains that not only is the question of truth at stake when investigating a given event, but an important struggle that researchers engage with is establishing the means by which to articulate the truth. Weizman recognizes the power invested in technology and how it is often used as a weapon of the state but proposes that these same technologies can be reversed towards good. This inflection point between the oppositional uses of technologies that operate both as weapons and investigative tools, provides a potent example of Foucault’s microphysics of power in contemporary conflict that takes place in the form of ground war and an information war. Foucault’s microphysics of power, interpreted through feminist critique and informed by foundational theories of Forensic Architecture, which promotes

²²¹ Foucault, *Discipline and Punish*, 26.

a “counter-forensic” approach to investigation will provide the main theoretical framework for an analysis of these questions.

Unlike the case study of Powell’s presentation of the satellite images in the chapter prior, which was based on limited select images that were treated singularly and detached from the ensuing war in Iraq, the case of Douma represents a highly documented episode in a decade-long civil war that has been captured in millions of images, still and moving, originating from multiple sources, most of them at ground level. If Powell’s presentation and the use of the satellite images signaled the generative disinforming potential of images on the cusp of the digital age in 2003, the Syrian War, which commenced eight years later in 2011, manifests the moment that Powell’s UN presentation unwittingly announced, when images in multiple become absorbed into the flow of digital mediascape and compete as evidentiary documents representing alternate truths.

Microphysics of Power and Investigative Aesthetics

Michel Foucault’s microphysics of power provides a useful model for analyzing not only contemporary images such as satellite images, digital photographs, and their embedded metadata, but also gives a framework for practices of viewing and understanding these images. Such practices are manifest in interdisciplinary visual investigation teams, which perform detailed interrogations of images and videos and then must consider how to present the information in an accessible way to broader audiences. To help formulate my conception of microphysics of power for the purpose of this analysis, I use a feminist reading of the term, which I then integrate with Forensic Architecture’s theory of “investigative aesthetics.”

Foucault’s foundational conception cannot be overlooked. Rather than a dual structure formulated around the ruler and the ruled, Foucault argued that power structures operated in a complex network that permeated society. His view of power which saw it not as a possession, but

rather as something that exists only when exercised proves useful to the network of forces and materials that constitute event and experience. Foucault writes,

Now, the study of this microphysics presupposes that the power exercised on the body is conceived not as a property, but as a strategy, that its effects of domination are attributed not to ‘appropriation,’ but to dispositions, maneuvers, tactics, techniques, functionings; that one should decipher in it a network of relations, constantly in tension, in activity, rather than a privilege that one might possess; that one should take as its model a perpetual battle rather than a contract regulating a transaction or the conquest of a territory. In short this power is exercised rather than possessed; it is not the ‘privilege’ acquired or preserved, of the dominant class, but the overall effect of its strategic positions—an effect that is manifested and sometimes extended by the position of those who are dominated.²²²

Looking at invisibility at a macro level in the context of power reveals deep historical linkages. Foucault identifies a moment in the early nineteenth century when the public spectacle of torture was replaced by an interiorized system of control, thus the theatrical representation of pain was replaced with more discreet modes of infliction and suffering. Moving the enactment of punishment from the scaffolds to within prison walls, the body ceased playing the role of a public target of penal recourse. The disappearance of torture as a public spectacle eventually transformed punishment into bureaucratic practices that commandeered the convict into a penal architecture.

Following this, punishment became the most hidden aspect of the penal process, and through this discretion, other consequences arose in that punishment assumed a more abstract conception, whose uncertain mechanics become all the more terrifying in the imagination. As Foucault describes, “...it is the certainty of being punished and not the horrifying spectacle of public punishment that must discourage crime; the exemplary mechanics of punishment changes its mechanisms. As a result, justice no longer takes public responsibility for the violence that it bound up with its practice.”²²³ Foucault identifies the efficacy of punishment existing not in its

²²² Foucault, *Discipline and Punish*, 26-27.

²²³ *Ibid.*, 9.

specificity, but rather in its unpredictable potential. At this point a logic was established by which a level of invisibility would be imposed according to the degree of criminality: “the more monstrous a criminal was, the more he must be deprived of light: he must not see, or be seen.”

The change in the display of punishment from public to discrete spheres also altered the relationship of the witness to that punishment. Once a participatory member of an audience, now bound by institutional description, a person who bore witness to a scene of torture that took place within the prison, was now vulnerable to prosecution were they to describe the event. With the act of witnessing now criminalized, the body of the witness came to participate in what Foucault called the “political economy of the body,” which centred the body as the nexus of punishment be it through direct physical acts via mechanical instruments, or more discrete iterations as would be exemplified in the panoptic prison. The body according to Foucault is directly involved in a political field:

...power relations have an immediate hold upon it; they invest it, mark it, train it, torture it, force it to carry out tasks, to perform ceremonies, to emit signs. This political investment of the body is bound up, in accordance with complex reciprocal relations, with its economic use; it is largely as a force of production that the body is invested with relations of power and rumination; but on the other hand, its constitution as labour power is possible only if it is caught up in a system of subjection (in which need is also a political instrument meticulously prepared, calculated and used); the body becomes a useful force only if it is both a productive body and a subjected body.²²⁴

Here Foucault makes clear that while greater environments are affected and destroyed through acts of war, the body remains the central nexus of control. The subjection of the body can be achieved by either direct physical means or by more subtle tactics that operate around logistics of calculation and organization, which can be found in the apparatus of technology. This programme of logistics, according to Foucault, then produces a “political technology of the body,”

²²⁴ Foucault, *Discipline and Punish*, 26.

whose tactics are necessarily disparate and diffuse and are implemented through a variety of tools and methods.²²⁵ Twenty-first century, systems of economy, labour, and politics continue to be invested in the body, as they were in the nineteenth century as identified by Foucault, although these investments now operate via novel technologies under the guise of participation. For example, the internet is now widely recognized as the greatest tool of mass surveillance in history, while singular agencies such as Google, Facebook, and Amazon have formed alarming monopolies over information and commercial platforms. In all cases the body is again implicated as online behaviour is being used towards the design and implementation of predictive technologies, and polarized factions form around worldviews capable of manifesting in physical violence as these perspectives collide.

Feminist critic Johanna Oksala offers that while Foucault's conception of power has contributed significantly to feminist theory, it has also attracted substantial criticism. Summarizing Foucault's contributions, she writes,

Although his understanding of power is often presented as a unified theory and labeled "productive power" or "a microphysics of power," it is in fact a multifaceted analysis of the historically shifting rationalities and technologies of power that have appeared and disappeared in Western societies. Foucault introduced and distinguished several different modalities of power, such as disciplinary power, biopower, pastoral power, juridical power, and governmentality in order to show how the exercise of power has taken historically varied forms, and how the technologies and practices of power have been rationalized or organized in different ways in different societies and at different points in time.²²⁶

According to Oksala, one of the main failings identified by feminist critics concerns the general scope his microphysics of power, which is considered too narrow. "The charge," writes Oksala, "is that the attention to a microphysics of power – the everyday practices and techniques of power – fails to address the more general, structural issues of power and therefore to provide a

²²⁵ Ibid.

²²⁶ Johanna Oksala, "Microphysics of Power," *Oxford Handbook of Feminist Theory*, Eds. Lisa Disch and Mary Hawkesworth (Oxford: Oxford University Press, 2016), 473.

macro-level analysis of domination.”²²⁷ Feminist critic Amy Allen offers that this shortcoming of Foucault’s analysis whereby the macro is not acknowledged does not “give us any assistance in examining deep structures of domination.”²²⁸ Therefore, argues Oksala, an “adequate feminist theory of power should include both micro-level and macro-level analyses.”²²⁹

Accordingly, the micro-level analysis would consider “a specific power relation between two individuals or groups of individuals, while the macro would include examine the “background of such particular power relations,” such as “the cultural meanings, practices, and larger structures of domination that make up the context which a particular power relation is able to merge.”²³⁰ Allen insists that without this level of analysis, “power relations studied in isolation from the cultural and institutional contexts can be perceived as anomalies, and not part of a larger system of domination, such as sexism.”²³¹ While I do not intend to perform an involved feminist reading of Foucault’s microphysics of power, I borrow the refinements suggested by the feminist critique of Oksala and Allen, to extend the analysis of power to the macro level. Their urging for multi-scaled analyses contributes to my conception of Foucault’s microphysics of power, in encouraging a broader lens when examining events and their subsequent investigations, which are formed of complex networks of actions in relationship.²³²

Contributing to an argument for a multi-scaled approach to analysis is one that is that of “hyper-aesthetics.” Coined by Matthew Fuller and Eyal Weizman, both of Forensic Architecture, “hyper-aesthetics” derives from an interpretation of aesthetics that draws upon the ancient Greek

²²⁷ Ibid., 474

²²⁸ Amy Allen, *The Politics of Our Selves. Power, Autonomy and Gender in Contemporary Critical Theory* (New York: Columbia University Press), 267.

²²⁹ Oksala, “Microphysics of Power,” 479.

²³⁰ Ibid.

²³¹ Allen, *The Politics of Our Selves*, 267.

²³² While I do not engage extensively in this section with a feminist critique, I align myself with Lisa Parks, who insists that any challenge of vertical structures is inherently a feminist project. Parks, *Rethinking Media Coverage*.

aesthesis, which pertains to the senses.²³³ Following this, explain the authors, aesthetics does not refer to prettification or decoration, but rather “concerns the experience of the world. It involves sensing – the capacity to register or to be affected, and sense-making – the capacity for such sensing to become knowledge of some kind. The finding or invention of means to achieve such effects is to aestheticize.”²³⁴

In this expanded meaning, as a way of sensing the world, aesthetics does not exclusively refer to a property or capacity of humans. It equally refers to other sensing organisms, such as animals and plants, which themselves apprehend their environment. Further we argue that sensing is also found in material surfaces and substances, on which traces of impact or slower processes of change are registered, including in digital and computational sensors, which themselves detect, register and predict in multiple novel ways.²³⁵

Aesthetics, then, according to Fuller and Weizman seems to describe a complex network of human and non-human participants who register the forces of the world and offer up responses in various modes of testimony. Foucault’s emphasis on power in terms of action and relationality aligns with Fuller and Weizman’s conception of aesthetics which they see not in exclusively passive terms of reception, but necessarily includes acts of perception in making sense of the world: “making sense involves constructing sense out of meaning.”²³⁶ They also acknowledge “that each form of experience has inherently unique aspects that not only shape it but constitute it.”²³⁷ This finding parallels Foucault’s microphysics of power which he conceives of not as static or univocal, “but define innumerable points of confrontation, focuses of instability, each of which has its own risks of conflict, of struggles, and of an at least temporary inversion of the power

²³³ Fuller and Weizman, *Investigative Aesthetics*, 33

²³⁴ *Ibid.*

²³⁵ *Ibid.*

²³⁶ Fuller and Weizman, *Investigative Aesthetics*, 34.

²³⁷ *Ibid.*, 33.

relations.”²³⁸ Investigative aesthetics, then, seems to interrogate these innumerable points of confrontation as they manifest into material, digital and atmospheric trace.

In recognizing these distinct and unique aspects and their processes, “aesthetics” in Fuller and Weizman’s usage is then necessarily “situated and perspectival.”²³⁹ These formulations align with Foucault’s conception of power, which is also situated and perspectival. So too is the formative model of the panoptic prison, to which Foucault pays much attention in *Discipline and Punish*, a concept I will return to later in the chapter. In the panoptic prison, surveillant power is situated at the “top,” in the tower, while its control, which is articulated through visibility becomes situated in the body of the prisoners.

Drawing from the term “aestheticize,” Fuller and Weizman arrive at two derivative terms: “hyper-aesthetics,” which they consider to be the “augmentation and elaboration of such experience,” and “hyperaesthesia,” which they conceptualize as the “state in which experience overloads or collapses, and as a result, sensation stops making sense.”²⁴⁰ As will be demonstrated, both hyper-aesthetics and hyperaesthesia, are terms useful for understanding the complex articulations of the events of this chapter’s case study. In the case of Douma, “hyper-aesthetics” describes the amplification of sensing needed to make sense of what might be considered otherwise “senseless” violence, as performed by investigative teams, while “hyperaesthesia” points to the media tactics employed, for example, by Syria and Russia following the attacks in an effort of programmed media chaos meant to confuse. As such, it will be made clear that when violence seems senseless, the impression is not accidental or “natural,” but could in fact be intentionally

²³⁸ Foucault, *Discipline and Punish*, 27.

²³⁹ Fuller and Weizman, *Investigative Aesthetics*, 34.

²⁴⁰ *Ibid.*, 33.

elicited by psychological tactics meant to augment the immediate trauma or to deflect accountability through programmed sensorial overload.

While Oksala and Allen's argument permits a dual-scale analysis of microphysics of power, Fuller and Weizman encourage a view of Foucault's power paradigm in terms of its specific physical manifestations, identifying how the relations of forces come to inscribe themselves on the material world. Therefore, my conception of microphysics of power, includes both the molecular and the global and looks at how micro or macro incidents play roles within larger political or sociocultural frameworks. In applying Foucault's theory of power through this newly constructed lens to violent events such as the Douma chemical attacks and their investigations, I am interested in how "productive power," (as Foucault's micro-physics of power has been presented) operates in destructive contexts.

In such cases, micro- and macro-level incidents include, for example, chemical reactions and the traces they leave, the granularity of rubble and the information it holds, or the force of impact and the fracture that remain. As will be revealed in the analysis of the visual investigative practices, each incident holds its own signature that contributes primarily to a lexicon of the immediate event and eventually towards greater geopolitical narratives, while in reverse, these global narratives can contribute much to the understanding of micro incidents. In the case of Douma, attention to the micro- and macrophysics of power, which as per Allen's recommendation, would include focus on the immediate scene, and its background, including but not limited to the context of the Syrian civil war. In an even wider context this analysis would include the lack of international response, which permits Assad to continue inflicting violence on Syrians in impunity to this day.

Such investigations explore not only the material aspects of munitions and explosions but looks as well at their histories of manufacturing and trafficking, linking them to particular geographies, agents and agencies. As such, the chlorine bombs used in the Douma attack, including the composition of the casing as well as the contents of the container hold a range of information for investigators. The container's contents, i.e., chlorine has a specific chemical make-up, while the canister holds information such as internal air pressure, weight, and the aggregate components of its body. While a macro-level analysis can reveal, for example, the provenance of the materials, including who is funding their purchase and transfer, from where the materials are being sourced, or why chlorine bombs were chosen as the weapon of attack.²⁴¹ In situations of allied forces, the territories involved also give some indication of the direction of media flows subsequent to events. In the case of the Douma attacks, Russian media was responsible for disseminating mass amounts of propaganda following the event.

The building on which the chlorine bomb was dropped holds another register of information, and as Weizman reminds, kinetic forces run constantly through building structures, shifting continuously, even if microscopically, in relation to load, vibration, air temperatures, humidity, pollution and so on."²⁴² The sensitive and sensing structure of a building serves as an apt metaphor for greater political (or even climatic environments), where forces and bodies, and the material world are coming constantly into contact, in variously dramatic or subtle ways, thereby causing shifts at either microscopic or global levels.

Environments are continuously communicating through patterns of contact and response; complex entities generate sophisticated responses that involve longer chains of association. For

²⁴¹ During a telephone conversation with Bellingcat's Nick Waters (March 26, 2021), I learned that chlorine can be more accessible than other ammunitions for the reason that it has commercial and domestic use for water treatment and therefore is imported and accessed in Syria with less restriction.

²⁴² Fuller and Weizman, *Investigative Aesthetics*, 44.

instance, explain Fuller and Weizman, “a patch of ground may be able to register, by being transformed, the presence of an organism or chemical. Each of these in turn may be the trace of an incident resulting from a military or economic policy.”²⁴³ It is thus how I envision microphysics of power in the present analysis—as a materialization and sensitization of long chains of association. The hyperaesthetics-informed methodologies practiced by Forensic Architecture, for example, are attentive to the micro and macro iterations of power and recognize the potency of cross-scale interactions. Due to these various modalities, “power,” writes Oksala, “is not like a thing that one owns but is always relational. It is an action in a relationship.”²⁴⁴ It is this conception of power that seems adopted in the methodologies of investigative groups such as Forensic Architecture, which acknowledges the many historical forms power has held. Rather than interrogating “things,” this research team is studying the relationships between things, which may or may not bear material trace.

Foucault’s stance that saw power in this active sense, removed it from the economism in the liberal and Marxist versions of the term of the 1970s, which conceived of power as a possession or a resource and reduced it to a model positioned around antagonistic class relationships. His conception that “dispositions, maneuvers, tactics, techniques, functionings of power” should be deciphered as a network of relations in constant tension, seems to underpin Fuller and Weizman observations of the constantly shifting kinetic forces affecting larger environments are small and large scale. Foucault identifies in the microphysics of power, important inflection points wherein instruments of power can be appropriated or reassembled towards resistance—this is also an aspect that informs Fuller and Weizman’s notion of aestheticization, which includes finding the means to

²⁴³ Fuller and Weizman, *Investigative Aesthetics*, 45

²⁴⁴ *Ibid.*

achieve such effects.²⁴⁵ This by extension, informs the collaborative investigative practices being studied here, as the research teams use technology to construct counter-models of events based on the evidence. Important too is the history of punishment as it relates to visibility and invisibility as described by Foucault. These logics apply to contemporary carceral systems and wartime strategies, which play upon a simple adage “out of sight, out of mind.” Invisibility and visibility are also guiding and sometimes competing principles in investigations, cases in which it is beneficial to reveal evidence but maintain sources discrete.

A regime of “hyper-visibility” can paradoxically be used as a program of obfuscation or invisibilizing, which results in hyperaesthesia—“a neurological condition in which sense perception radically overloads” and is often a result of mental and/or physical trauma.²⁴⁶ Hyperaesthesia, explain Fuller and Weizman can occur through the amplification of the sensitivity of single surfaces, but also through massively multiplying images that are seen as information.²⁴⁷ This was one of the techniques used by the Syrian regime in collaboration with Russian alliance following the Douma chemical attack on April 7, 2018. Rather than attempting to remove the images that were flooding social media depicting the attack, the regime chose to inundate the media field with a surplus of other images and information. This technique operates by seeding doubt by generating more information than can be processed. Following the attack, Russian media disseminated propaganda, “aware that incriminating images were already in circulation, sought to create confusion by proliferating many other images related to the incident, aiming to create enough of a smoke screen to deflect from their allies’ culpability.”²⁴⁸

²⁴⁵ Fuller and Weizman, *Investigative Aesthetics*, 33.

²⁴⁶ *Ibid.*, 83.

²⁴⁷ *Ibid.*, 85.

²⁴⁸ *Ibid.*

Panoptics

The microphysics of power are not simply forces that are imposed or inflicted upon bodies, but are also absorbed and transformed into attitudes which are more broadly retransmitted, as is the case of prisoners of the panoptic prison who becomes the principle mode of surveillance through self-regulation. The panoptic prison is one example of the intersection of the political economy and political technology of the body, in which the mechanism and effects of both are distributed across the population of prisoners with the goal of coherence and order. Here the bodily investment of power is seeded into the social.

The distribution of the surveillance among a population is a more efficient modality of control than the singularly dominating power held by the state. For Jeremy Bentham it was the watching represented by the central tower that articulated the power of the panopticon, while for Foucault it was the act of being watched, which invaded the bodies of the prisoners who themselves became invested in self-regulation. Within this lateral distribution of effects, there is vertical ordering at work represented in the architecture of the tower whose superior vision is implicit and whose centrality and height permits a range of aspects. The panoptic prison replaces the darkness and obscurity of the dungeon with light and exposure of open cells, and rather than using a punishment that marks the surface of the body, it employs a form of control that permeates it. It is this logic of exposure used as an efficient mode of control that prompts Foucault to remark that “visibility is a trap.” The articulations and effects of the panoptic prison provide an effective model for those subjugated to constant aerial surveillance of drones, or who are made frequent attack of aerial bombing. The danger of visibility holds true in the context of war, where visibility translates bodies into targets, and aerial power, notably, inspires a re-design of lived space into one

of “survival” space where activity is forced underground, and which depends on darkness as protection.

“The panopticon,” says Foucault, “functions as a kind of laboratory of power. Thanks to its mechanisms of observations, it gains in efficiency and in the ability to penetrate into men’s behaviour; knowledge follows the advances of power, discovering new objects of knowledge over all the surfaces on which power is exercised.”²⁴⁹ Satellite technology is a potent example of the inflection points that Foucault identified in the microphysics of power where a contestation of control could be activated. Within the panoptic imagination, the satellite’s orbital eye can be seen as the epitome of global surveillance. However, as the research teams of concern to this chapter reveal, such remote sensing technologies that are often used by the state in a bid for control, can also be appropriated to form counter-narratives that insist on accountability.

Foucault’s ideas can be applied to the war on terror, whose vague yet extensive conceptualization of an “everywhere war” involved punishment that could be enacted anytime and anywhere. The war on terror initially depended on spectacle and strong images, followed by the suspicion that evil was constantly coalescing underground or off-grid, which necessitated evermore vigorous regimes of surveillance. This production followed the exteriorized-to-interiorized progression of punishment as described by Foucault wherein the crime (in this case the downing of the World Trade Centre) initially instigated a punishment in the form of a highly televised military response in a “shock-and-awe” strategy of constant urban bombing, which was followed by the punishment and torture in the interiorized spaces of the Abu Ghraib prison.

Aerial perspectives present robust examples of inversion points as they are essential in the strategic implementation of violence from above, but also provide a valuable starting point for

²⁴⁹ Foucault, *Discipline and Punish*, 204.

counter-investigations. The aerial perspective is often understood as a distanced viewpoint, which reduces scale, erases detail and abstracts landscape features. However, the aerial perspective in the hands of investigators who through technological means can reduce such distances in the digital recreation of events, present novel and vital viewpoints in understanding material evidence. Drawing from Foucault's interpretation of power as a network, an analysis of power should not be undertaken primarily from above. In the practices of Forensic Architecture, Bellingcat, and the New York Times Visual Investigations Team, the aerial view is strategically used to provide an overview of the micro- and macrophysics of power of an event. And, rather than guarding this view like a possession as another entity in a power economy, in a rather Foucauldian way, they activate it through dispersing it through networks, both technological and human. In activating the aerial view among ground-level actors, these teams participate in the interrogation of power as encouraged by Oksala, which is, from the bottom, up.

Laura Kurgan: "Conflict Urbanism: Aleppo"

High-resolution satellite imagery is particularly useful for assessing the extent of conflict, forced displacement, and other human rights concerns in remote, inaccessible or controlled regions of the world.²⁵⁰ As the imaging capacity of high-resolution satellites has advanced over the years, so too has the ability to analyze the impact of conflict on infrastructure and land features identifiable from such imagery. And while the cost of geospatial technologies has decreased and increasing availability of geospatial data have made high-resolution imagery analysis a viable research tool for human rights organizations, limitations to access still remain for geopolitical, economic, commercial, or even sometimes inexplicable reasons. Because of this exclusiveness,

²⁵⁰ "High Resolution Satellite Imagery Ordering and Analysis Handbook," American Association for the Advancement of Science. <https://www.aaas.org/resources/high-resolution-satellite-imagery-ordering-and-analysis-handbook>

the formation of the contemporary “world picture” remains a select enterprise in the sense of who can and cannot access geospatial images. Attuned to these limitations, artist and architect Laura Kurgan, has long acknowledged the role played by satellite technology in picturing and defining the globe, with her research focused on the manner in which new technologies have transformed human experiences of time and space. Her art-making practice, which she describes as a combination of conceptual art, geography and mapmaking is constantly attentive to what is and is not made visible in a satellite image, and for reasons that go beyond the limits of resolution or the diminishment of detail in distance.²⁵¹

In 2015 Laura Kurgan commenced the open-source project *Conflict Urbanism: Aleppo* (Fig.13) drawing from social media, which at the time was still developing as an arena for data mapping. The term “data visualization” had only recently entered the public vernacular in 2011-2012, with big data establishing itself on the heels of Facebook (2004), Twitter (2006) and the iPhone in 2007.²⁵² Using social media sites such as YouTube, along with satellite images purchased from commercial satellite image vendors DigitalGlobe and Pleiades, Kurgan and her team at the Center for Spatial Research at Columbia University began mapping Aleppo, with the original intent of following the war in real time. The largest city in Syria before the war and one of the oldest cities in the world, Aleppo has suffered extensive physical damage through strategic targeting whose goals extended past material destruction to an attack on the city’s cultural memory and urban history. Kurgan and her team were interested in charting the patterns of damage that had remapped the city over the course of the Syrian War, but also used archival images to identify antecedent conditions that may have signalled the formation of the immediate patterns they were

²⁵¹ Kurgan, *Close Up at a Distance*, 174.

²⁵² Laura Kurgan, “Laura Kurgan by Noah Chasin,” interview by Noah Chasin in *BOMB Magazine*, Dec. 15, 2016, <https://bombmagazine.org/articles/laura-kurgan/>

investigating. Such logics could then be applied to more predictive ends by assessing what future events and consequences were being indicated in the present patterns of damage in the city. It is a case where environmental damage influenced by meteorological events, architectural limitations, ground slope, and conflict collide. As such, Kurgan's interdisciplinary approach is necessary to understand the processes as they unfold and contribute to future events.

Before-and-after satellite images provide a foundation to the project, which allow users to navigate through various regions of Aleppo during different time periods. What is often captured in such before-and-after images is an absence—things that once were, are no longer; architectures that once stood vertical in one image are now replaced by darkened depressions of land and rubble in another. In being able to visit the city, at a neighborhood scale, the viewer is granted a sense of intimacy with place that is not afforded by the summary overview of the satellite images, where features are reduced to shapes and before-and-after is described through mere morphological distinctions from one day to the next. The effort in meticulously charting these places is a practice of making the invisible visible in a way that contextualizes absence by recording its patterns.

Beyond the visualization of the missing and the destroyed, the methodology of the project which required the collection of large quantities of satellite images was itself often described by gaps and lacunae in data sets. For example, Kurgan shares that the attempts to purchase particular imagery were laden with what she called “inexplicable idiosyncrasies” in that an image is known to have been taken but does not appear in the catalogue for purchase. Such idiosyncrasies contribute to Kurgan's description of the commercial satellite imagery landscape as “geopolitical conversations to which few citizens have access.”²⁵³ This conception of technologies forming their own landscapes influenced by geopolitics that in turn influence the representation and production

²⁵³ Kurgan, “Laura Kurgan by Noah Chasin.”

of global landscapes, recalls Mitchell's definition of landscape as a cultural production. Geospatial imaging is a predominantly Western tradition as satellite technology is majority owned by the West, while the landscape of the East holds particular import as a viewing (and imaged) subject, whose interpretation remains invested with orientalist perspectives.

Kurgan's satellite map is a stratified construction, and as such recalls Parks' theory of vertical mediation compressed to macroscopic levels. Parks describes how vertical hegemonies are formed through mediations of vertical fields between ground and orbit—what Kurgan essentially provides here is a scaled model of these mediations. For example, overlaid on Kurgan's satellite map of Aleppo is UNOSAT data indicating damaged sites as compiled by UN experts. Another layer includes aerial violence information her team obtained through collaboration with Human Rights Watch, which has created a dataset of the Syrian government's barrel bomb attacks. Kurgan explains that while this information exists, they have not been able to display it for “instructive reasons”:

Although the layers of the map are generated independently, their visual language invites comparison. Different layers of data are created in different ways, and for entirely different reasons. Overlaying them on the standard grid that the map necessarily imposes can lead to misleading comparisons. People often think that layers of a map simply add facts. In reality, each layer is a story about its own dataset. Although they can complement each other, and although they are all showing the same place, they can give the impression of presenting a complete truth, when, in fact, they cannot do that. We are still searching for a mapping language that can harness these divergent datasets in a way that says, “It's not all here, but let's look at this and explore.”²⁵⁴

It is poignant that Kurgan insists that a particular language is required for each level, whereby data specific to that field tells its localized story. Kurgan's description of maps formed by layers of data that build stories that overlap can also be applied to an archeological approach to

²⁵⁴Ibid.

place, in which multiple histories are held in sedimentation. In the conception of the map, what Kurgan here suggests is that through this kind of digital palimpsest, a certain construction of truth is not immediately established, but at least a conversation is beginning. This knowledge based on layered information and developing vocabularies can be applied more broadly to digital images and visual culture. As artists such as Trevor Paglen and Hito Steyerl have made clear, the advent of the digital image evoked major transformations in digital culture, yet many people continue to accept the image at face value, while a significant amount of information is being held as data at encoded levels. The existence of such data is acknowledged and used by those in the know, while the vast majority of digital image producers and consumers remain unaware of this information and its implications. Such asymmetries between civilian and state or corporations that describe unequal access to knowledge or technology is often leveraged by those with access, in a bid to assert or maintain power structures.

Kurgan hopes that in time the map of “Conflict Urbanism: Aleppo,” will become a civil and human rights resource but admits that the ethics of the endeavour are complicated in that her team is trying to guard against doing something in support of the civic opposition that inadvertently gets turned against them and what they are defending. She gives the example of the layers in the map that locate the list of destroyed heritage sites and one that is based on a list published by the State Department that lists prewar cultural sites. She concludes that the comparison of these two levels is both powerful and dangerous and has therefore switched off the layer that would permit the comparative reading online to prevent it from forming an “easy list of future targets.”

Kurgan describes the data and the images in the Aleppo projects not as illustrations but as research or a mode of discovering the world, explaining that the mapping project permitted the visualization of clear patterns such as the disproportionate targeting of certain neighborhoods. She

points out that certain residential areas such as Sheikh Sa'eed neighborhood, show great evidence of barrel bomb craters and through this it becomes clearer to those at a distance the localities of conflict, which traditional war photography can reduce to universal concepts. Kurgan's maps are active documents that operate differently than static images of iconic wartime photography and as such she encourages people to "think of data as a navigation device. It's not the Truth."²⁵⁵ In the concept of data as navigation device, it is worth returning as well to the visualization of data as a layered construct. Navigating involves not only a lateral travelling across the map's surface, but conversations or mediations between stratified fields of information, each holding its own story. Kurgan explains that through the alignment of different layers positioned one on top of the other, one can establish a mode of navigation towards certain things on the ground. Truth according to Kurgan becomes a vertical accumulation that must itself be ordered, rather than an absolute entity that presents itself.

Kurgan's interest in satellite images has invited critique from audiences not because of the images' military origins, (although she admits that is sometimes an issue), but because of the apparently compromised epistemology of the overhead view that is interpreted as an aspiration towards a disembodied view from nowhere.²⁵⁶ Her response to this is that when one "actually works with these images and the data embedded in them, the truth becomes more complicated. It's obviously not from nowhere. What people think of as flat, I call multidimensional."²⁵⁷ This multidimensionality again recalls Parks' conception of aerial spaces as a series of vertical fields, where the "invisible" layers of data, which when analysed both separately and holistically, contribute to visualizations and articulations of information. Such accumulations of truth would

²⁵⁵ Kurgan, "Laura Kurgan by Noah Chasin."

²⁵⁶ Ibid

²⁵⁷ Ibid.

not be possible without an understanding of the strata that makes up aerial perspectives through lenses that understand the layers of information both compositely and specifically.

The advent of Google Earth permitted digital citizens to undertake their own mapping projects, the multidimensionality of this tool contributing to world views at an extensive scale. It is important to consider as well, the collection of governmental, military and corporate stakeholders, and their exchanges and negotiations which are implicated in the translation of satellite data into images of selected global views—transactions that remain invisible to the front-end user. Geospatial images are assemblages of tiled rendering that distort a staggered spectrum of time into a convincing static representation, which by proxy of those who own the technology, promotes a distinctly Western world view under the guise of immediacy. The “world picture” delivered by Google Earth is a deceptively smooth one promoting uniformity and immediacy. However, as Kurgan asserts, “Instead of a comprehensive blanket of uniform-resolution (or real-time) images, it is a patchwork of archived aerial and satellite images of varying origins, sources, motivations and resolutions.”²⁵⁸

General users of the platform therefore have limited to no understanding of the “invisible” network of people and machinery involved in the manifestation of these geospatial images, such as the fact that Google does not produce these images itself but purchases them from commercial satellite companies, who have been tasked by agencies (generally government, military or corporate) “to collect data about specific locations at specific times.”²⁵⁹ The fact that an image of an area of the earth is only made visible through requests by and transactions between elite organizations is little known to consumers, let alone the specificity of such requests as to who

²⁵⁸ Kurgan, *Close Up at a Distance*, 20.

²⁵⁹ *Ibid.*, 20.

exactly has aimed the satellite at a particular region at a particular time and why. “In the ease of the Google Earth interface,” explains Kurgan, “like the simplification of a map, the political, military, and economic stakes that underwrite the creation and expansion of the database can often disappear. All that’s left are the minimal data: the image has a date, a time stamp, and a series of coordinates in which it has been registered and made available for purchase by others, including Google Earth.”²⁶⁰ This deeper underwriting and the stakes they claim represent another layer of information of the Google Earth “world map,” which showcases a Google “worldview” laced with immediacy, but inscribed with little accountability. Moreover, general users of the interface do not understand, nor are they presented with the information that would clarify provenance or materiality, whether images have been taken from a plane or a satellite, or whether they have been taken at high or low resolution.²⁶¹ Even in high stakes use of satellite imagery, such as the case of Powell’s 2003 U.N. presentation, such specifics regarding the origins, technicality, and perspectives of the images were never revealed, instead the expectation was that the photos would be received primarily, if not solely, for their documentary status.

As emphasized by Powell, the incomprehensible aspects of the satellite images—the difficulty of their reading as a result of their technical nature, only confirmed the images’ credibility. However, as Kurgan suggests, essential information is being held at invisible levels by means of decision making that involve both corporate and state agencies, with restrictions around resolution that permit a much more exacting global view to the military and the state than to global citizens. Google Earth is used colloquially as a way-finding tool or a curiosity kit in a hybrid pictorial cartographic placement of the accoutrements of the self (one’s home, for example, if one

²⁶⁰ Kurgan, *Close Up at a Distance*, 21.

²⁶¹ *Ibid.*

is so lucky to have one), but it is also used as a starting point for military drone operations, as sensor operators often use Google Earth imagery to “build a picture” of ground conditions and to imagine what a mission area should look like from above.²⁶² Satellite images serve a range of intentions from the banal to the murderous, but it is crucial to underline that they can also offer a forensic view to contest violence and hold actors accountable. In this regard, Kurgan points to the use of satellite images in proving the mass killings that took place at Srebrenica in 1995, which “set a precedence for a new conception of a geopolitical world in which it was not only a reasonable working assumption that major events could be monitored from outer space, but that the traces of that surveillance would appear in the public sphere.”²⁶³ Since then, this genre of before-and-after images has become commonplace in much news gathering and reporting from zones of conflict and mass destruction; through this strategy media users come to understand stories through absences, filling in the blanks in a comparative analysis of what was there and why it was destroyed.²⁶⁴

Open-Source and Visual Investigations: Douma

The transition of satellite imagery from sole state property into the public domain in 2005 ignited a new geographical curiosity, as Google Earth provided a “user-friendly” application through which to explore it. The manner in which geospatial and aerial imagery became available (albeit in a limited way), has also invited forensic investigators into the public realm; open-source intelligence (OSINT), permits web-connected civilians to participate in investigations that draw upon collaborative efforts of data sharing to challenge singular state-driven narratives. Google Earth is a fundamental platform in OSINT investigations which draw from a variety of openly

²⁶² Parks, *Rethinking Media Coverage*, 167.

²⁶³ Kurgan, *Close Up at a Distance*, 22.

²⁶⁴ *Ibid.*, 23.

available sources, including social media posts, YouTube videos, databases, news stories—any kind of information that is online and generally free.

The strength of this investigative practice which is being increasingly adopted by mainstream news sources, such as the *New York Times*, is that it permits anyone with an internet connection and access to a computer to participate in the collection and verification of evidence. Open sources, explains *Times* visual investigations journalist, Christiaan Thiebert, are the opposite of closed sources, which are generally limited and kept anonymous,²⁶⁵ such as those which played the pivotal role in Powell’s bid to bomb Iraq (and was later classified as an “intelligence failure”). Open-source agencies such as Bellingcat and Forensic Architecture share both investigative and pedagogic goals as they build open-source tools, create guidebooks, offer workshops, and publish case studies in an effort to share knowledge so that others can learn how to engage with these practices. These efforts dismantle top-down structures and their associated technologies often used as a means of surveillance, by redistributing them laterally, effectively transferring to civilians, the forensic knowledge and practices that were historically assumed by the state and interpreted according to state-established laws.

The human rights organization Syrian Archive has collected over three million videos and countless photographs contributed by activists and witnesses attesting to chemical attacks in Syria. These images show adults and children collapsed in convulsions, gasping for breath; often there is foam around their mouths and noses, while aerial images reveal decimated cities as piles of rubble. Before-and-after satellite photos reveal the systematic destruction of one city after another, as Bashar al-Assad worked to regain rebel-held regions. The collection of images that collaborate and compete through their range of perspectives convey a variety of narratives. The same image might

²⁶⁵ “How the Times Makes Visual Investigations,” <https://www.youtube.com/watch?v=reTUxfQsSUQ>

be used both as evidence to support witness testimony and as a visual aid to government propaganda. Such collisions and confusions of image and message contribute to complexly entangled networks of information. As such, aerial imagery taken by satellites in orbit are put into conversation with videos and photographs taken by a handheld phone camera, but to understand such conversations requires new ways of seeing that acknowledge the exchange of ground-level and aerial vocabularies.

The aerial perspective is a critical aspect for both human rights organizations and visual investigation teams as a means to amass evidence in order to build a case against the Syrian regime and their allies and to hold them accountable for crimes against humanity. However, aerial imagery works most effectively when in dialogue with ground-level imagery, and the war in Syria comes into view through images in multiple taken by a variety of actors and from a number of perspectives, with the extensively networked media machine of the internet playing a key role. The circulatory fora of the internet and social media platforms are participating in a paradox as images of conflict and war crimes surface and are disseminated on a global level, and yet these images fail to elicit the response they merit. Within these circuits, images can become documents of disinformation and instruments of propaganda. The insertion of any level of doubt is the cornerstone to post-truth politics and images have come to be heavily leveraged within that landscape.

Visual investigation practices invested in transparency provide resistance to disinformation and by extension offer push-back against authoritarianism and extremism. In doing so, they insert a new spectrum of images into visual culture, which are attentive to material facts, interactions between the physical and technical world, and details that exist at imperceptible levels. Images in the context of visual investigations are accompanied not by a description of what viewers “should”

see as surface representation, but rather, by a narrative that describes the process through which they have been understood by investigators and how this relates to the process of truth building. Viewers are shown, for example, how to understand video and photographs as stratified documents embedded with valuable information at both visible and invisible levels. The aerial perspective plays a consistently pivotal role in visual investigations for both researchers and those who wish to understand the findings. For example, satellite imagery provide valuable overviews to interrogate the site of events, while they also serve as essential documents to visualize time and space connections that permit investigators to share their knowledge publicly. Such applications of the aerial perspective that place its revelatory capacities in the hands of citizens represent an important transfer of power, as a perspective notoriously associated with empire comes to serve civilians at ground level.

Following the events of April 7, 2018, the Syrian government denied their involvement and President Assad offered two explanations for the event: a) that it did not occur b) that rebel groups were responsible for the chemical attacks. Such absurd claims were made possible as Syria had, since the 2012 battle in Aleppo, been waging an extensive mediascape propaganda war.²⁶⁶ The New York Times Visual Investigations Team worked together with Bellingcat,²⁶⁷ and Forensic Architecture to demonstrate that the chemical bombing had indeed taken place that day and that the Syrian regime was responsible for the attack that included upwards of 60 casualties.

²⁶⁶ Janine Di Giovanni, "Inside Syria's Propaganda Wars," *Newsweek*, Dec.24, 2016, <https://www.newsweek.com/syria-propaganda-aleppo-assad-536003>

²⁶⁷ Bellingcat is a British-based investigative news site that specializes in open-source intelligence. The organization was founded by British journalist Eliot Higgins in 2014. Bellingcat publishes the findings of both professional and citizen journalist investigations of war, human rights abuses and criminal activity. A collaborative enterprise, the organization published guides and offers workshops to educate the public on how to perform online investigation, involving such techniques of geolocation and forensic readings of imagery. They have contributed significantly to investigations related to the Syrian War, calling upon a range of specialists to analyze the weapons used, their provenance and effects. <https://www.bellingcat.com/>

Malachy Browne, senior investigator of the New York Times Visual Investigation Team reveals that the investigation of the chemical attack on Douma took two and a half months to complete, and in addition to their collaboration with Bellingcat and Forensic Architecture involved five of their own team members reporting on it.

The extent of the collaboration testifies to the range of knowledges that is required to understand images as evidence through approaches that pay attention to the vast materiality implicated in events and their representations. Therefore, the research teams consult with photographic specialists, chemical experts, translators, first responders and medical personnel, whose exchange of information works towards truth as a composite entity.²⁶⁸ In this case specifically, the teams collaborated with the aim of exposing the lies of the Syrian regime and furthermore to reveal the great efforts that Assad had exerted to conceal evidence.

A pioneer in open-source journalism, the New York Times Visual Investigation Team, established in 2017, has produced numerous award-winning investigations, and has contributed significantly towards dismantling harmful state-produced narratives in such places as the U.S., Syria, Lebanon, Turkey, and Palestine. Malachy Browne describes visual investigations as “a new form of accountability and explanatory journalism that combines traditional reporting with advanced digital forensics, such as collecting and parsing information from large volumes of videos, photos and audio, analysis of satellite imagery and 3-D reconstructions of crime scenes.”²⁶⁹ The range of practices described by Browne is a reflection of the heavily mediated world of the current moment in which enormous amounts of data are produced through a variety of technologies at small and large scale. Accountability and explanatory journalism, as practiced by the New York

²⁶⁸ The White Helmets (officially known as Syrian Civil Defence), a volunteer organization that operates in opposition-held parts of Syria and Turkey contributed to this investigation.

²⁶⁹ “How the Times Makes Visual Investigations,” <https://www.youtube.com/watch?v=reTUxfQsSUQ>

Times Visual Investigation Team approaches reportage as a process rather than a product. As such, readers and viewers are given tools and introduced to methodologies that help them to develop knowledge related to seeing environments and images that can be broadly applied.

The team has undertaken numerous investigations related to the Syrian War, but the Douma investigation was particularly complicated by the fact that Assad's regime took control of the crime scene, and many witnesses and media activists were transported out of the vicinity directly following the event. The control of the crime scene locally, meant that foreign-led investigations had to unfold remotely and would need to draw upon open-source intelligence and communication between established networks of journalists and activists on the ground in Douma. Open-source investigation becomes useful in such contexts, as Browne describes one of its strengths is in tapping into immense volumes of imagery available on the open web, which allows researchers to get to the truth of an event by breaking the images down moment by moment. Sources of interest include civilian video, satellite imagery, timestamps from a tweet, which through meticulous processes of verification can provide traces to witnesses as primary sources. It then becomes necessary to find secure ways to communicate with those witnesses to establish what they saw. Very often the team receives raw imagery, as was the case in the Douma attack.

The success of the investigation depends on collaboration between local journalists, who have been sought out through Whatsapp networks or other established systems that allow secure communication between the Times and ground sources. The key feature that the team sought to establish was the minute at which the attack took place, and indeed time is often a critical, yet invisible element embedded within images. Browne notes that the process of establishing the time of the attack included metadata analysis which means "going into actual files, explaining to people on the ground the best ways they could send files to us, so that we can extract the files to confirm

reports of airstrikes occurring at a particular time.”²⁷⁰ When forced to undertake investigations at a distance, witnesses become vital contributors by providing on-site evidence, which can subsequently be verified by the team. Often these people must be instructed on how to safely share the photos, video and audio files, which introduces another aspect of collaboration into the field of journalism, once cast as the domain of the rogue journalist.

In open-source investigations, one piece of evidence and its process sends researchers to another and in establishing the time of the attack through the time stamp in the video taken by the first responder, the team was able to access thousands of intercepted recordings of Russian pilots carrying out their missions. Understanding the time that something happens on the ground allows the investigators to examine what is going on in the skies at crucial moments, and then apportion blame to specific pilots for aerial attacks.

The Times report showed that long-term evidence had been amassing which indicated that regime helicopters had been dropping bombs throughout the conflict.²⁷¹ Flight observers had seen helicopters leave a military airbase at 7:16PM - 7:23PM the night of the attack, which served as a staging point of many runs that day; soon after, the helicopters were seen circling close to Douma.²⁷² This time coincided with reports issued by medics in the area on Twitter and Whatsapp. Flight paths are another key invisible feature in an investigation, which need to be materialized through data—an example to Kurgan’s conjoined concept of data as evidence. The Times team was able to visualize the flight path of the helicopter associated with the bombing, by locating

²⁷⁰ “How the Times Makes Visual Investigations.”

²⁷¹ For example, similar canisters were found on site in the campaign to retake Aleppo in November 2016; at an attack of a hospital at Al-Lataminah October 2016; in Saraqib February 2018. Please see Bellingcat investigations related to Syria at <https://www.bellingcat.com/?s=syria>

²⁷² “How the Times Makes Visual Investigations.”

intercepted air-ground communications out of which specific sets of coordinates could be gleaned. info from the

These cockpit recordings were then combined with ground-level witness testimony, videos and photos, and their embedded metadata, to amass significant evidence to prove that a Russian plane had dropped the chlorine bomb on the evening of April 7. Again aerial perspectives are crucial in articulating such information as seen in the satellite image (Fig 14), which shows the Dumayr Airbase in relation to the city of Douma. Annotated as it is, the satellite image effectively translates the essential time-space relationships that form a timeline and ascribe more specific geographic coordinates to the event, which helps to further concretize the case.

To better understand the events of April 7, the team established a sense of what was occurring in Douma over the course of the day, and in referencing satellite imagery, they found that the particular street where the chemical attack took place had been obliterated by bombing over the previous twenty-four hours. This led them to question why, and their response came in the form of a leaked UN report obtained by a Times journalist in Geneva which revealed that there was an ambulance run all along that street leading to an underground hospital located under the building opposite where the bomb landed, with the tunnel entrance located at that corner.²⁷³ This information was verified after speaking to several sources on the ground in Douma who pinpointed the ambulance run on maps forwarded to the *Times*, which led the team to surmise that the regime was attempting to cut off access to the hospital.

According to the *New York Times*, the first journalists allowed to visit the site were from Russian media who broadcasted their own distorted version of the events, however this footage, while being framed to support Russian claims that rebel forces were responsible for the attack,

²⁷³ “How the Times Makes Visual Investigations.”

unwittingly provided foreign investigators with valuable visual evidence. This video footage proved to be vital to the investigation in revealing a partially collapsed yellow metal canister on the roof of an apartment building, which had been clearly damaged from the impact (Fig.15). Using geolocation,²⁷⁴ which is a process of identifying the geographical location of a person or device by means of digital information via the internet, the team used reference points found in the video, to situate the building that was the site of the chemical attack, including a mosque, a school, and a building that is seen from the destroyed building's balcony. Verification required that multiple video sources be analyzed to identify similar environmental features, which were then cross-referenced with satellite imagery to establish the exact location of the building. Once the location and the time were established, a flight path could also be traced from a helicopter that had departed from a nearby military base.

Confirming the location of the building according to the features found in video evidence, proved that this was the same building in which dozens of dead bodies were found as corroborated by graphic videos of the site by first responders. A separate video reportage showed a similar canister that was found in the bedroom of an apartment at another location in Douma that day. Such canisters, which most frequently contain chlorine, and sometimes nerve agents such as sarin, have been found on several occasions in various locations throughout Syria over the course of war. These findings have been used by humanitarian rights organizations such as the Global Public Policy Institute to build maps that show chronologically ordered patterns of usage throughout the

²⁷⁴ Google Maps defines geolocation as “the identification of the geographic location of a user or computing device via a variety of data collection mechanisms. Typically, most geolocation services use network routing addresses or internal GPS devices to determine this location. Geolocation is a device-specific API. This means that browsers or devices must support geolocation in order to use it through web applications.”
“Geolocation: Displaying User or Device Positions on Maps,” *Google Maps Platform*, accessed Aug. 26, 2021, <https://developers.google.com/maps/documentation/javascript/geolocation#:~:text=Geolocation%20refers%20to%20the%20identification,is%20a%20device%2Dspecific%20API>.

country.²⁷⁵ Overall, the team analyzed dozens of videos and photos of the attack under the guidance of academics, scientists, and chemical weapons experts and partnered with investigative group Bellingcat to scour over a portion of the visual evidence.²⁷⁶

Investigations performed by visual investigation teams involve a robust and rigorous collection of analyses from micro- to macro-levels that examine registers from the molecular to the architectural. In the Douma case, for example, the Times consulted chemical weapons experts to determine the chemical signatures found in blood samples of victims and to describe the traces of chemical reactions on material evidence, such as frost appearing on a ruptured chlorine canister. Specialists in architectural analysis, collaborators Forensic Architecture used the open-source 3-D recreation suite, Blender to build a model of the bomb site in an effort to recreate the physical structure before the attack to piece together a chain of events. Drawing from the videos collected from witnesses at the scene who entered the building, they were able to recreate an accurate model of the building. The range of expertise involved in the analyses echo the layered language Kurgan referenced, in discussing the building of truth. To understand the environment and what it may or may not reveal, requires a knowledge of its material capacities;²⁷⁷ to analyze the visual evidence requires another layer of knowledge related to the limitations of technology and the way that photographic or moving-image documents may affect the representation of detail.

²⁷⁵ Please see: <https://chemicalweapons.gppi.net/data-portal/> for the GPPI's web resource that offers information and analysis on the use of chemical weapons in the Syrian conflict, including the most comprehensive dataset of confirmed attacks to date. Their research was supported by the Government of Canada, the German Federal Foreign Office, the Robert Bosch Stiftung, and the Ghazi and Badrieh Foundation.

²⁷⁶ Bellingcat's founder Eliot Higgins has established himself as one of the world's leading investigators of the Syrian War, and through his experience has gained a sophisticated knowledge of the regime's tactics and weapons. Bellingcat has published over 300 OSINT investigations related to Syria, with the first report listed on their site dated in 2014. For the archive of investigations related to Syria on Bellingcat's website please see: <https://www.bellingcat.com/page/1/?s=syria>

²⁷⁷ For example, in a phone conversation with Bellingcat's Nick Waters on March 26, 2021, Nick explained to me that chlorine gas reacts with pine wood. If furniture is made out of pine, chemical traces can be found in the wood that would indicate the presence of chlorine. This can help in cases where homes are suspected to have been made targets of chlorine bomb attacks.

Immediately following the event, whose occurrence was signalled on social media, fragmentary pieces of information began to emerge from Douma. The piece of evidence that Browne most coveted for his team, was a continuous video that would allow them to establish the location and details of the site, and that the victims were all found in one place. This was finally delivered to them by a first responder who videotaped his team's search through the building on which the chlorine canister had been dropped. Once the geolocation of the site was verified, Forensic Architecture could then build a digital model of the building based on information that was gleaned in videos filmed by first responders who entered the building. As the men moved through stairwells from floor to floor and entered and exited rooms, they provided a valuable mapping of the building's interior. The videos also provided graphic evidence of 34 bodies, including men, women, and children, found across two floors and in the stairwell.

Through the modelling (Fig. 16), the New York Times Visual Investigation Team identified four key pieces of evidence on the roof of the building: 1) indentation near the nose of canister 2) black corrosion from chlorine gas 3) lattice imprint on the bomb 4) bomb's rigging found in the debris.²⁷⁸ Notably, the aerial perspective is implicated both in the delivery of the bomb and in the re-creation of the event through visual modelling, which allows the relationships of the key features to be elucidated. Viewers of this digital rendering are given an oblique vantage point of the immediate crash site of the balcony, and its roof-top placement within the context of the entire building. In this case, the evidence is vertically oriented, as all material traces point to the fact that the bomb was dropped from the sky, and the aerial view provides a critical inflection point as the source of violence, while offering the angle through which the act can be investigated, and its evidence collected.

²⁷⁸ Malachy Browne et al., "One Building One Bomb: How Assad Gassed His Own People," *New York Times*, June 25, 2018 <https://www.nytimes.com/interactive/2018/06/25/world/middleeast/syria-chemical-attack-douma.html>

Counterforensics

Making sense of complex cases such as Douma, where probes by outside investigators have been further complicated by the perpetrators of the violence taking control of the site, itself requires an approach that penetrates or transcends state control. When a site of violence has been cordoned off, as was the case in Douma, forensic knowledge of the event becomes sole property of the state. Therefore, investigators who depend on meticulous analysis of material evidence made inaccessible through state, military or police control, call upon what Eyal Weizman calls “counterforensics.” As practiced by Forensic Architecture, counterforensics is according to Weizman, “a civil practice that aims to interrogate the built environment to uncover political violence undertaken by states.”²⁷⁹ It is an approach to forensics that re-appropriates a mode of investigation normally practiced by the state, into the hands of civilians.

The complexity of contemporary conflict which operates as physical and informational wars requires multidisciplinary perspectives to interrogate the intersection points between atmospheric, digital and physical signatures. Such signatures, which often operate at invisible or incremental levels are of particular interest to the investigative practices of Eyal Weizman. His interdisciplinary research agency, Forensic Architecture, which he founded in 2010, uses architectural theories and technologies to assemble evidence and build cases that contest singular state-owned narratives. Born in Haifa, Israel in 1970, Weizman completed his doctorate in architecture at the London Consortium/Birkbeck College in 2006. Prior to establishing Forensic Architecture, he set up the architectural collective DAAR in Beit Sahour/Palestine in collaboration with Sandi Hilal and Alessandro Petti.

²⁷⁹ Ibid.

Materiality is of central import for Weizman and his research group, as he says that materials act as an entry point to amplify the voices of victims. Describing the organization's progression through an intersection of politics and materiality, he says, "On the one hand, working on physical facts (on settlements/colonies in the West Bank, on the location of military bases or on environmental destruction of militarized extractive policies in different places worldwide) gave us a human rights basis, which provides the material ground for understanding human rights as a political issue."²⁸⁰ Beginning his investigative work in Israel/Palestine, Weizman's Forensic Architecture—located at Goldsmiths College in London—is now also part of the newly established Investigative Commons, a Berlin-based "super-hub" for investigative organisations, including Bellingscat.²⁸¹ The enterprise of collecting, identifying and analysing the physical facts that provide the framework of human rights can be read as a cataloguing of Foucault's microphysics of power, "whose field of validity" locates in between the functionings of power "and the bodies themselves with their materiality and their forces."²⁸² By focusing on the material, Forensic Architecture is able to work backwards to use the physical remnants of after-effect to re-assemble events to form a trace of accountability that points to the apparatuses of power and by extension the institutions of their provenance.

The interdisciplinary nature of Forensic Architecture's research practices acknowledges what Foucault identified as the "political technology of the body," whose control is achieved through a variety of tactics enacted by a range of tool and methods. To account for this spectrum

²⁸⁰ Eyal Weizman, "The Forensics of Human Rights - An Interview with Eyal Weizman," interview by Christian Bergman, *Hafiza Merkezi Berlin*, March 7, 2021, https://www.hm-berlin.org/forensicsofhumanrights_eyalweizman/

²⁸¹ Philip Oltermann, "Berlin's No. 1 Detective Agency is on the Heels of Human Rights Abusers," *The Guardian*, June 27, 2021, last accessed August 24, 2021. <https://www.theguardian.com/law/2021/jun/27/berlins-no-1-digital-detective-agency-is-on-the-trail-of-human-rights-abusers>

²⁸² Foucault, *Discipline and Punish*, 26.

and diversity requires an investigative approach that is equally as diverse in methodologies and instruments, and the products of his agency include “evidence files in the form of building surveys, physical or digital models, animations, video and maps of various forms.”²⁸³ As such, Weizman finds that a combination of artists and scientists can augment the power of an investigation as each field brings with it particular approaches, and also gives the visual investigations a range of platforms. This versatility between legal and art forums increases the visibility and operation of a case, as art galleries permit public exposure of information that is often more discretely held in the context of a court of law. Speaking about aesthetics in the functioning of visual investigations, Italian architect Francesco Sebregondi, a Forensic Architecture collaborator points to the etymological roots of “aesthetics” which speaks to the question of how to render things such as objects, events, or justice meaningful.²⁸⁴ These questions, he says, are pertinent to artists and the art world, and by extension to those who engage with art in galleries and museum.

The question of aesthetics is pertinent for Weizman, as he has stated that Forensic Architecture is concerned not only with a search for truth, but also with finding the means by which to articulate it. This requires recognizing “how those in power use technology like a weapon and finding a way to reverse this intention towards some positive end.”²⁸⁵ This multiplicity of form in evidence building, which calls upon a range of technologies, instruments, perspectives, and knowledges, can be understood as a logical response to Foucault’s theorizing that the microphysics of power are a set of dynamic forces that inscribe surfaces, infiltrate environments, and act as potent points of volatility.

²⁸³ Eyal Weizman, *Forensic Architecture*, 64.

²⁸⁴ Francesco Sebregondi in “Tracks: Special Smartphonocène,” ARTE.TV, April 9, 2021, <https://www.arte.tv/fr/videos/102697-000-A/tracks/>

²⁸⁵ Eyal Weizman in *Ibid.*

Forensic Architecture's varied methodologies account for the multivalent nature of violence and their investigations seek to present incidents through reconstructions that acknowledge the political and historical environments that produced that violence. Exploiting another inflection point in the microphysics of power, Forensic Architecture performs such investigations through an inversion of the way that forensics is usually performed—a trained gaze that has been appropriated by state agencies such as police and secret services. It is a powerful perspective that has permitted “the state to monopolize both killing and identification” through a normative methodology that justifies violence in the first place, and subsequently produces a summary “truth” designed to serve state interests.²⁸⁶ According to Weizman, to understand an incident that honours its material, temporal, psychological complexities requires a counterforensics approach, further developing a neologism that Thomas Keenan attributes to Allan Sekula. “With the term [counterforensics],” says Thomas Keenan, “he [Sekula] refers to nothing less than the adoption of forensic technologies as a practice of political maneuvering, as a tactical operation in a collective struggle, a rogues’ gallery to document the microphysics of barbarism.”²⁸⁷ Weizman acknowledges both Keenan and Sekula as foundational to his interrogation of forensic practices, especially the idea that before an investigation can unfold, the mode of interrogations itself needs to be questioned. Sekula relied on Foucault as he referenced technologies, political maneuvering and unflinchingly specific and direct photographic practices,²⁸⁸ which he referred to as the “microphysics of barbarism”²⁸⁹.

²⁸⁶ Weizman, *Forensic Architecture*, 64

²⁸⁷ Thomas Keenan, “Counter-Forensics and Photography,” *Grey Room*, Spring 2014, No. 55, Allan Sekula and the Traffic in Photographs (Spring 2014), 69.

²⁸⁸ Marie Muracciole and Benjamin J. Young, “Editors’ Introduction: Allan Sekula and the Traffic in Photographs,” *Grey Room* 55 (Spring 2014): 10.

²⁸⁹ Allan Sekula, “The Body and the Archive,” in *October*, Vol. 39, (Winter, 1986), 64. Sekula specifically uses this term to describe Ernest Cole’s *House of Bondage* (1967), a book documenting the abuse of Blacks living under apartheid.

Sekula argues that photography has often functioned as a tool for “cataloguing and surveillance,” both of which depending on a process of “individuation and identification” that makes it a convincing participant in the empirical or the objective.²⁹⁰ Regarding the photograph as evidence, he asserts, “The only objective truth that photographs offer is the assertion that somebody or some thing [...] was somewhere and took a picture. Everything else, everything beyond the imprinting of a trace, is up for grabs.”²⁹¹ Keenan extends this statement:

The “imprinting” of the trace decides nothing, settles nothing, determines nothing, forces no conclusions. Conclusions, decisions, happen in an altogether different realm and depend on “differing presentational circumstances” and conditions of use. This “indeterminacy” of meaning does not hold in spite of the indexicality of the image but because of it: Because there is a trace, an imprint, there is the possibility of interpretation, the opportunity for meaning, fiction, and hence the “battleground of fictions.” Because there is a trace, there is a battle. Around the image, a debate can begin—we decide what it says; it does not, it cannot. This is what the word evidence means: “everything beyond the imprinting of a trace, is up for grabs.” The reading of the evidence, which is the only thing that one can do with evidence since it does not speak for itself (this hold even with the nonmute evidence, like testimony in a courtroom), will always be a matter of political maneuvering.”²⁹²

Indebted to Keenan and Sekula, Weizman locates an essential concept in the word *forensis*, which in Latin means “pertaining to the forum.” In this definition Weizman finds a productive category that reverses the historical transformation that the forum underwent towards its modern definition pertaining exclusively to courts of laws, while “forensics” took on a scientific reference, primarily in the medical sciences. As such, says Weizman the critical public aspect has been lost and “forensics has instead become the art of the police.”²⁹³ This appropriation speaks to the control over which state agencies have assumed in the surveillance and governance of populations.

²⁹⁰ Sekula, “The Body and the Archive,” 64.

²⁹¹ Keenan, “Counter-Forensics and Photography,” 67.

²⁹² Ibid, 66-67.

²⁹³ Weizman, *Forensic Architecture*, 65.

In the sense of counterforensics, the investigative mode does not remain in sole possession of neutral technical experts who submit evidence to empirical scientific analysis towards a juridical process through established court systems, but instead becomes a practice engaged with civil practice in effort to articulate public claims.²⁹⁴ As such an important aspect of counterforensics is that “forensic” knowledge moves out of the cordoned site of the crime scene and out of the hands of police and state power to become public property. Forensic Architecture’s contribution to public knowledge is achieved through an archive of video investigations available on their website, through public and academic lectures, and through art exhibitions. Not only does Forensic Architecture provide a catalogue of evidence but they also describe the techniques used to investigate it. Like the *New York Times*, they are participating in the genre of explanatory journalism, which is vested in transparency, knowledge sharing, and sees truth as process. Weizman emphasizes the importance of this stance and the urgency to make things visible as part of the production of historical truths, which often become degraded in the hands of the state:²⁹⁵

Turning forensics against the state is essential because of the intertwined nature of state violence, which as previously mentioned, is both violence against people and things and also against the evidence that violence has taken place at all. It is important to confront secrecy and denial not only for the sake of historical truth, a reckoning with the deeds in the past, but because the manipulation of facts is used to give legitimacy to state violence and enables its ongoing perpetration.²⁹⁶

²⁹⁴ Ibid.

²⁹⁵ In a paper titled “The Spread of True and False News Online,” published in *Science*, M.I.T. researchers Soroush Vosoughi, Deb Roy, and Sinan Aral, identified factors that contribute to the appeal of false news on Twitter. Novelty was a significant factor in influencing the sharing of information, and false claims since they are invented, were significantly more novel than true ones. Emotions also contributed to the tendency of false news to be shared, with false news eliciting greater surprise than true stories. Soroush Vosoughi et al., “The Spread of True and False News Online,” *Science*, March 9, 2018, last accessed August 24, 2021. <https://science.sciencemag.org/content/359/6380/1146>

²⁹⁶ Weizman, *Forensic Architecture*, 64.

Weizman recognizes that the manipulation of facts not only has historical resonance, but also possesses great generative potential as virtual environments become increasingly sophisticated in terms of media manipulation. As has been previously discussed, cheap fakes and deepfakes as they are taken up by algorithms become rapidly disseminated, with false news traveling faster than truth. This means that data can be a precarious mode of evidence as unequal access to technology and information between state and citizen further concretizes top-down power structures that have epistemological, temporal and physical consequences. Evidence in the hands of the state often becomes a production that leverages the modern interactions of forums and forensics, both of which have been neutralized in an exercise of state seeing. Evidence analysis, like technology must be understood, not as something objective, neutralized through expert analysis and the empiricism of science.

Weizman asserts that it is necessary to acknowledge that the nature of evidence is changing and that technology promotes a kind of overlap between evidence and testimony. He explains how digital technology has influenced testimony so that it is no longer a collection of statements solicited from the field and procedurally recorded, but has assumed a more immediate manifestation so that “testimonies today are given by the people experiencing violation on their terms and they are entangled with the evidence and the media.”²⁹⁷ This newly compressed manifestation of evidence/testimony must also take into account the changing nature of technology used to record events, in which instruments can be reflexive vectors of microphysics of power. The phone camera which has become a ubiquitous recording tool by activists, victims and witnesses is a potent example of this, in that it records from both ends, capturing the field in front of the lens but also recording the individual holding the device. Interpreting videos formed of this

²⁹⁷ Weizman, “The Forensics of Human Rights,” July 4, 2021. https://www.hm-berlin.org/forensicsofhumanrights_eyalweizman/

duality then requires a spectrum of perspectives: technology is needed to understand the medium in terms of resolution and bandwidth, and to profoundly analyze the content, while humanities is required to form a point of convergence for artistic, critical and scientific sensibilities.²⁹⁸

Forensic Architecture's acknowledgement of the changing nature of evidence and their insistence that human rights analyses be invested in material evidence gives them methods of decisive intervention. As attentive as the group is to material facts, perhaps even more importantly is their focus on a rich and often overlooked territory of investigation, which Weizman terms the "threshold of detectability." Counterforensics, says Weizman, necessarily operates within this threshold, and insists that attention be paid not only to what images represent, but also to their materiality, be it analogue or digital. As such, a photograph, for example, is "not only an image representing reality, but simultaneously image and presence" and therefore must be studied on both of these levels.²⁹⁹ This threshold speaks to the interference that can occur at an elemental level, as in the relationship between materials and surfaces that may interrupt the representation of details at a small scale. Weizman offers an analogue example of the threshold of detectability in the manner in which a silver halide grain, necessary in the photographic process, interrupts resolution by sharing the same scale on paper as a body occupies in space. Photographed from an aerial distance the grain of silver cancels out the body photographed from an aerial distance; meanwhile, a more contemporary example is when a pixel is calibrated to erase human bodies in satellite images.

Contributing to the threshold of detectability is what Mark Dorrian describes as a "politics of resolution," which limits the resolution of publicly available satellite images, in comparison to

²⁹⁸ Ibid.

²⁹⁹ Weizman, *Forensic Architecture*, 20.

that afforded to the military.³⁰⁰ Google Earth is constructed around such politics as it describes the world according to fluctuating spectrum of clarity, which according to Dorrian creates, “a new popular political map structured on image resolutions and the upload periodicity of data sets.”³⁰¹ (Notably, areas of higher real estate value have higher resolution and faster refresh rate, while underdeveloped nations are virtually “under-represented” with a “third-world lo-res.”³⁰² The resolution of satellite images now available to the public has improved dramatically since the early Landsat earth observation images of the 1970s, which was limited to 60m/pixel. At the turn of the millennium, the resolution available to the public was 2.5m/pixel, which allowed buildings to be differentiated, but still could not capture the human body. A few years later this resolution improved to 0.5m/pixel and was thus halted until in 2014, when an appeal to the US Department of Commerce, from a commercial satellite company was successful in having the resolution increased to 31cm/pixel, arguing that a person could not be recognized at the 0.5-meter limit.³⁰³ Weizman explains, “The pixel resolution of contemporary, publicly available satellite images is not only a product of optics, data storage, or bandwidth capacity, but of legal regulations that bear upon political and even geopolitical rationales.”³⁰⁴ Such legal regulations govern what aspects of the world should be made visible or invisible.

Numerous tactics of invisibilization have been leveraged by Assad in the case of the Syrian war, a conflict that has been prolifically captured by video and photographs— these too are images meant to activate a response by those who view them. The immense archive of images that have been collected over the ten-year course of the conflict, represents multiple instances of the

³⁰⁰ Marc Dorrian, “On Google Earth,” in (Eds.) Mark Dorrian and Frédéric Pousin, *Seeing From Above: The Aerial View in Visual Culture*, London; New York: I.B.Tauris, 2013), 301.

³⁰¹ Ibid.

³⁰² Ibid. 301-302

³⁰³ Weizman, *Forensic Architecture*, 29.

³⁰⁴ Ibid., 27.

phenomenon described by Weizman in which testimony and evidence collapse. These are not “instrumental images” like the aerial reconnaissance images of WWI (a whose purpose of choreographed killing motivated Sekula to label them as “negatively instrumental”), however they do retain the potency of actionable evidence held within the serial wartime aerial photographs of the early 1900s. As those now archival images of early modern war aerial reconnaissance photos once were, the photographs and videos being produced and collected of the events of the Syrian War are linked to a network or a chain with a set of actors and agents that respond to them.

Chapter 3: Narrative Perspectives: Aerial Perspectives and Production of Place

In the fall of 1991, seven months after the end of first Gulf War, the French photographer Sophie Ristelhueber traveled to Kuwait with the intent of documenting the traces of conflict left in the desert, seeing the trenches and depressions from explosions as “wounds” inflicted to Earth. Entitled *Fait*, which translates to English to mean both “fact” and “done,” the work is a compilation of 71 photographs of the Kuwaiti desert pock-marked and disfigured by bomb blasts, inscribed with trenches, and littered with the abandoned detritus of war.³⁰⁵ The series of chromogenic and silver gelatin prints incorporates both aerial and ground-level shots taken from a variety of angles ranging from perpendicular to oblique to the more conventional horizontally framed landscapes.³⁰⁶ The range of perspectives from which the photos have been taken cause a confusion of scale as viewers are unable to discern between images taken from, for example, 100 feet or 20 centimeters above the ground. According to Ristelhueber, ambiguity was a mandate of the work in emphasizing “how little we see” regarding the effects of war through satellite imagery and technical data – “in a way,” she says, “we see nothing.”³⁰⁷

Curiously, however, *Fait* does not feature satellite imagery or technical data, but rather is a collection photographs taken from an airplane or with feet firmly placed on the ground.³⁰⁸ In certain of the images, it could be said that Ristelhueber appropriates the aesthetics of satellite images through the use of a vertical aerial perspective, but there is great disparity between

³⁰⁶ The project assumed two formal iterations that of a book and an exhibition that toured in multiple international art institutions were produced into book form and as an internationally travelled exhibition. Of the 71 photographs in the book, 48 are colour prints, while 23 are black and white. In the exhibition, the images are large-scale monochromatic silver gelatin prints (110.6cm x 124.8cm each).

³⁰⁷ “Sophie Ristelhueber—Documenting Traces of War,” TateShots, Tate Modern, <https://www.youtube.com/watch?v=PBsgm4OBOfE>

³⁰⁸ The images are labelled according to numerical distinction, for example, “Plate No. 1.”

photographic images taken from a handheld camera from an airplane and ones taken via satellites. On a material level, they are not at all the same – contemporary satellite images are digital composites of pixels and embedded data, while the photographic prints in *Fait* are composed of silver gelatin of salt. Each medium and technology has its own relationship with the notion of ambiguity, as they come to affect resolution through material properties. The resolution of digital satellite imagery is dependent on several processes, such as the number of pixels in the image, focal length of lens, sensor size and distance from the ground. In aerial photographs taken from an airplane with a handheld analogue camera, the latter factors also contribute to resolution, however in the case of a silver gelatin print, the grains of the silver salts, rather than pixels can come to affect the details that will be revealed or lost in a given photograph. As will be argued throughout the chapter and realized through visual art examples, material distinctions are also important for the histories they hold and from which technologies cannot be decoupled in contemporary use. It is a curious choice then for Ristelhueber to choose to form an argument about the limitations of one media and associated technologies using another. If anything, satellite images are often advanced as “empirical,” which is to say that they *do* reveal concrete information about the surface of the world – in short there *is* something to see in these images.

A more accurate statement might be to assert that rather than constituting some objective vision of the ground below, satellite images are always bounded by cultural understandings and assumptions.³⁰⁹ This claim extends to the broader category of aerial images, and what Ristelhueber is here demonstrating is not so much the lack of what “we see” in images of the world from above, but rather how it is that “we” are led to see it (with the sense of “we” in this case, perhaps being more exclusive than it is collective). The essentializing that occurs in Ristelhueber’s use of the

³⁰⁹ The same claim could (and has) been made about landscape images (see for example, WJT Mitchell, *Landscape and Power*).

first-person plural pronoun, also asserts a positionality, that of a “we” of the West and as such the 71 photographs become an essay on a European “here” versus an orientalist “there.” Rather than interrogating the limits of optics in the distanced aerial view, *Fait* seems to point to the enduring tradition of producing landscape according to Western ideals, which here reasserts the status of Empire in aerial technologies and the view from above.

If aerial images are often yoked to military uses, surveillance, and acts of power, which can be considered aerial-view master-narratives, this chapter considers how nuances of aerial angles forge narratives and counter narratives. Part of this investigation requires considering how past legacies of perspectives, instruments and materials continue to contribute to contemporary meaning production, in ways that often go unacknowledged. The advent of ubiquitous digital platforms that draw upon satellite imagery and remote sensing technologies has mobilized aerial views within a vast network advancing these perspectives as a dominant visual paradigm of landscape representation. With aerial views assuming an authorial role in the production of world views, it therefore becomes important to understand how the subtleties of angles can affect meaning production in such views from above.

Aerial perspectives cannot be essentialized and singularly conceptualized as “the” view from above as not all aerial perspectives are equal; there is different information held within the range between perpendicular and oblique viewpoints. For example, the perpendicular or vertical perspective associated with satellite imagery shows no evidence of a horizon line, while this traditionally anchoring visual element or some reference to it is generally retained in images that privilege oblique aerial perspectives. This range of angles and the information they translate, variously influence photographic representations and productions of spaces, places and landscapes, yet while the technology of their capture garner attention, these effects are infrequently

discussed. Likewise, landscapes cannot be essentialized—to refer to deserts, as “the desert” fails to capture the complexity and diversity of these biomes and the cultures of the people who inhabit these places. A final argument against essentializing is in the usage of the pronoun “we,” as referred to above, as this implies a shared point of view—a perspective or positioning often invested with geo-political registers.

It is important to examine the lexicon that is used to describe aerial landscapes images and the disparity of the metaphors variously employed by geographers, artists, and curators to classify and describe these spaces. For instance, what does “remote” mean when qualifying warfare or landscape, and what kinds of positionality are insisted upon in the usage of this term? Or what kind of knowledge is advanced about a Middle Eastern landscape when its referential readings draw from a canon of Western art and literature? Metaphors matter; I therefore question the vocabularies used, asking, for example, how adjectives are revelatory of the perspective and point of view of the speaker and thus contribute to the formation of worldviews.

With the technicalities and contexts of angles established, I will then apply this knowledge to an analysis of Sophie Ristelhueber’s *Fait*, as I interrogate the artist’s problematic leveraging of ambiguity in a production of place.³¹⁰ I argue that Ristelhueber’s aerial project shows signatures of nineteenth-century Orientalist methodologies in likewise using ambiguity to depict a Middle Eastern desert, which reveals a confluence of European attitudes towards this geography. As deserts are often conceived of as homogenous and empty spaces, they become particularly inviting to Western interpretations that draw upon established tropes, which include seeing them, for

³¹⁰ My conception of production of place involves the interpretation of an environment, which is formed of pre-conceived notions or stereotypical attributes that are perpetuated through serial media dissemination, or as repeated literary or artistic tropes. Such productions contribute to the of semi-mythical interpretations of place that have limited connection with reality by investing them with ahistorical attributes. The production of place then is not necessarily representative of a site in actuality but is rather a creation of a site based on a set of pre-formed ideas.

example, as wastelands, sites of lawlessness, or a backdrop to “terrorist” activity. Using deserts as a case study, I will consider how ambiguity has an art historical legacy in the production of these landscapes, which permits them to become empty screens onto which Western imaginings of the Orient can be projected. This discussion will then move more specifically to drones which have distinct linkages to deserts, which as frequent sites of air control bases as they do target areas, and as such contribute to their militarized histories.

The final section of the chapter consists of an analysis of select work by American artist Trevor Paglen, who, like Ristelhueber engages with questions of ambiguity and the role played by aerial perspectives in producing desert landscapes. I argue that Ristelhueber’s approach to aerial perspectives operates irresponsibly, by promoting the ambiguity of aerial perspectives first and foremost as an aesthetic project. Conversely, I advance that Paglen engages in a critical manner with the problematics of perspectives and associated notions of invisibility and obfuscation in way that acknowledges the specific and often militarized histories of vision and practices of seeing. For Paglen, seeing the contemporary historical moment calls upon understanding that material and epistemological legacies of visioning technologies are inextricably linked with surveillance and war.

Aerial Angles: Vertical and Oblique

Aerial photographs fulfill a range of imperatives – they are aesthetically compelling as artistic documents, strategically instrumental in the context of war, indispensable in topographical mapping and hold evidentiary status. In this range of operation and because aerial perspectives of landscape deviate compositionally from the traditional horizontal framing of landscape (notably in the loss of the horizon line), the successful interpretation of aerial images requires a new lexicon of seeing and describing which acknowledges that machine eyes and human eyes see the world

differently. Once this knowledge is established, a statement regarding the paucity of information made available through satellite imagery and technical data, as made by Ristelhueber, can be distinctly challenged. What Ristelhueber might be more accurately describing is the lack of awareness in how to glean information; as the argument in Chapter Two advanced, significant valuable information associated with digital images is expressed at the “invisible” level of metadata. Access to this information and an understanding of what this data can illuminate about the ground-level information reveals that indeed much can be seen from the view from above.

In a geospatial context, aerial photography is typically classified into two categories – vertical and oblique, with the classification depending on the camera axis, scale of the image, and the type of sensor used, while oblique angles can be further parsed into high and low variations. A vertical photograph is one which has been taken with the camera axis directed toward the ground as vertically as possible (Fig.17), while an oblique photograph is one which has been taken with the camera axis directed at an inclination to the ground.³¹¹ Vertical photographs are the most common type of aerial photograph used for remote sensing and aerial survey purposes. Because in this case there is no tilting of the camera, a smaller area is imaged. These images can be scaled, allowing objects and distances to be measured, aiding in their identification; when viewed in stereo, vertical photographs can give information about the height or the vertical characteristics of landmarks and buildings.³¹²

Used in conjunction with maps and other sources, vertical aerial photographs can provide useful information, for example, in searches for unexploded ordnance or assessments of property boundaries. While oblique aerial photographs provide the viewer with an easily comprehensible

³¹¹ Shevta Uppal, “Introduction to Aerial Photography,” *Practical Work in Geography*, National Council of Research and Training, Palak Printers, 2019,72.

³¹² *Ibid.*, 73.

image of a location as a sense of relief is evident (Fig.18).³¹³ A drawback to this angle is that features in the background are often too small to be recognised or can be hidden behind buildings.³¹⁴ Low oblique photos are taken with an intentional deviation of 15-30 degrees in the camera axis from the vertical, which makes the horizon line not visible in these framings, while in high oblique photographs the camera has a higher degree of tilt.³¹⁵ In the latter case, the camera angle is intentionally inclined at around 60 degrees from the vertical axis. In high oblique aerial images, the horizon line is visible, and a larger area of land can be photographed.³¹⁶ Oblique aerial imagery is helpful to reveal topographic details of the land and is useful for geological or archeological investigations. Low and high oblique imagery are often used in reconnaissance surveys and can also be used towards building 3D models, while vertical photographs are better for mapping and most object detection use cases.³¹⁷

Aerial photographs can also be classified according to scale, which in the context of an aerial image is the ratio of the distance in the photo, compared to the corresponding distance on the ground. This means that if the scale of the aerial photo is known, a formula (photo distance multiplied by the scale factor) can be used to calculate the ground lengths and areas of its features, which is always equal to the ratio of the photo distance to the ground distance).³¹⁸ For aerial photographs acquired with a digital camera, scale is primarily expressed as the “ground sampling distance” (or GSD). Geospatial scientist, Sara Hanna defines the GSD as the distance between the centers of two adjacent pixels in an image, or how big each pixel is on the ground, and is also

³¹³ Ibid.

³¹⁴ Uppal, “Introduction to Aerial Photography,” 73.

³¹⁵ Ibid.

³¹⁶ Ibid.

³¹⁷ Ibid.

³¹⁸ Sara Hanna, “Scale and Aerial Photography: GSP216: Introduction to Remote Sensing,” Humboldt State University. http://gsp.humboldt.edu/OLM/Courses/GSP_216_Online/lesson2-2/scale.html

sometimes referred to as spatial resolution.³¹⁹ GSD is a linear measurement that represents the ground width or length of pixel and is typically expressed in metres, although in the case of imagery captured by UAVs it is often expressed in centimetres³²⁰ (signifying the high optic precision of their visioning technologies).

GSD describes how big each pixel is on the ground, so for example an image with a GSD of 50cm means that a pixel in the image represents 50 cm on the ground (or $50 \times 50 = 2500$ square cm). The larger the GSD of an image is, the lower its spatial resolution of the image (meaning less detail). Once the GSD is established, the ground footprint (the area covered on the ground by a single image) can be calculated by multiplying the GSD by the number of pixels in the image.³²¹ This latter information can be found in the digital image's metadata file, which contains, for example, pixel length and height, longitude, and latitude of where the image was taken, along with the type of instrument used to capture the image.³²² As the flying height increases, the image's GSD increases, which means less detail is made visible.

Aerial imagery scales determine what area of land is covered by the photograph and in how much detail. The scale of aerial photographs can vary typically from 1:100 to 1: 200,000.³²³ Geospatial sciences define three primary categories of aerial photographs based on scale: large, medium and small.³²⁴ Large scale aerial photographs are generally taken at lower elevations and have a scale of 1:15,000 or larger and cover smaller areas in greater detail, making it useful for

³¹⁹ Ibid.

³²⁰ Hanna, "Scale and Aerial Photography."

³²¹ Ibid.

³²² For example, if an image's GSD equals 0.036m; the image equals 4000x3000 pixels, the digital footprint would be: $4000\text{m} \times 0.036\text{m} = 144\text{m}$; $3000\text{m} \times 0.036\text{m} = 108\text{m}$. To find the area: $144\text{m} \times 108\text{m} = 15,552\text{m}^2$. This means that this single image covers approximately 1.5 hectares on the ground.

http://gsp.humboldt.edu/OLM/Courses/GSP_216_Online/lesson2-2/scale.html

³²³ Hanna, "Scale and Aerial Photography."

³²⁴ Uppal, "Introduction to Aerial Photography," 75.

measuring objects and mapping features.³²⁵ Medium scale aerial imagery has a range of scale between 1:15,000 and 1:30,000, while small scale imagery has a scale less than 1:30,000. ³²⁶This latter category captures larger areas, but in less detail and it is most useful for studying relatively large areas, without a need for detail.³²⁷

As this system of classification shows, certain angles of aerial imagery are more useful in capturing certain distinctions of ground information than others. Perpendicular angles typical of satellite imagery, whose scale is embedded as metadata, may prove more challenging for untrained observers as ground features are rendered into pattern, while oblique angles retain some suggestion of the horizon line which has been a long-established point of reference in the framing of space. Satellite images are not defined exclusively by direct perpendicular angles, as, for example, Laura Kurgan shows that in satellite images, the presence of people is often detected by their shadows, the revelation of which, depending on the angle of the satellite.³²⁸ Furthermore, Kurgan notes that these shadows are often corrected to erase the individuals entirely, which confirms that it is not only the perspective from which an angle is taken that set limits on what can and cannot be seen in a satellite image.

Sophie Ristelhueber: *Fait*

Ristelhueber's *Fait* is a project that finds its dominant articulation through degrees of angles, as the artist exploits the range of information available in vertical, oblique, and horizontal framings of landscape to produce among viewers, a confusion of scale and spatial disorientation. The series of 71 chromogenic and silver gelatin prints capture features of an unspecified area in

³²⁵ Hanna, "Scale and Aerial Photography."

³²⁶ Uppal "Introduction to Aerial Photography," 75.

³²⁷ Uppal "Introduction to Aerial Photography," 75.

³²⁸ Forensic Architecture, "A Lesson in Counter Forensics: Interpretation," Seminar series at Tate Britain with Laura Kurgan, April 5, 2019, <https://vimeo.com/328655041> lecture at Tate.

the Kuwait desert months after the end of the first Gulf War. Certain images taken from the distance of an airplane show, for example, trench lines cutting across the land, while close-range shots taken from ground-level reveal hollowed-out artillery shells or discarded personal items such as blankets or boots. In the exhibition, the aluminum-mounted printed prints³²⁹ are arranged on the wall in a grid-like assemblage, whose total spatial dimensions and arrangement vary according to the respective space of their showing.

Now part of the permanent collection at the National Gallery of Canada, *Fait*, in its current iteration, measures 4.5 metres high and 47 metres long, and occupies three of the museum's contemporary galleries (Fig.19). National Gallery Curator, Marc Mayer notes the disorientating effect brought on by the change of perspective and scale, as viewers move consecutively from one image to the next. Viewers, who Mayer refers to throughout the essay as "we," must continually self-resituate or reorient in relation to the scene.³³⁰ "Occasionally," he comments, "an image appears that is not ambiguous, such as of cheap wool blankets that Iraqi soldiers abandoned in their trenches."³³¹ He then continues to make sense of these objects through a reference to the Western art historical tradition, claiming that, "These blankets have the intense sentimental fascination of Van Gogh's famous shoes."³³² Perhaps these art historical references are Mayer's bid to elevate the artistic status of *Fait*, whose documentary significance he believes has overshadowed the artistic merit "of a work that goes well beyond mere documentation to test perception and undermined point-of view."³³³ He then rhetorically asks: "Can it help us to feel the

³²⁹ Dimensions of each bronze powder-coated framed print = 110.6 x 124.8cm.

³³⁰ Mayer's "we" operates similarly to Ristelhueber's use of "anywhere" in reference to the universalist qualities in *Fait*, in suggesting that these scenes of a bombed-out desert could be "anywhere." Mayer's "we" is assumedly referencing an audience that is artistically versed and is comfortable defaulting to aesthetic or thematic references over more politically charged ones.

³³¹ Marc Mayer, *Sophie Ristelhueber: Fait*, (New York: Errata Editions, 2008), n.p.

³³² Ibid.

³³³ Ibid.

facts, especially those to which other forms of transmission like journalism and political rhetoric have inured us?” Finally, Mayer concludes that *Fait* “offers no more comfort as art than it does of evidence.”³³⁴

However, discomfort seems to be an aim of the work whose ambiguity amplifies a nagging sense of disorientation, which makes viewers conscious of their relative orientation. It is possible that a single image functions both aesthetically and evidentially, so that a discarded object may reference Van Gogh and hold concrete information about the past and act as evidence of war. How these items are interpreted say much about the relative position of the interpreter, which serves as another exercise of orientation in the destabilizing tactics of *Fait*, a work which hovers in between high-art and photojournalism.

In *Fait*, Sophie Ristelhueber draws on a range of angles, with the intent not to establish the particularities of Kuwait or to build a more comprehensive picture of the place, but rather to destabilize viewers by confusing the scale and interrupting any consistent viewpoint. Notably, however, the series includes several traditionally framed landscapes, whose visible horizon line, in most cases, cuts across the upper third of the image. Easily identifiable as “landscapes,” these images function as anchor points for viewers as they move through the images, by permitting momentary respite from the delocalizing effect generated through the vertical and low-oblique aerial framings. Paradoxically, it is these images that amplify the disorientation through offering a point of stability founded on the horizon line as a standard of comparison to the many images of aerial ambiguity.

“Plate 61” (Fig.20) is an example of a horizontally framed image, featuring what seems to be a piece of a plane’s mangled fuselage in the foreground, with pale sand in the background

³³⁴ Ibid.

reaching towards a sliver of blue/grey sky. Although the subject of the photograph maintains some ambiguity, as the dismantled condition of the machinery makes certain identification impossible, a viewer can at least easily orient themselves to the object. Meanwhile “Plate 67” (Fig.21) a low-oblique framing, shows a scattering of abandoned vehicles in advanced stages of rusting on the desert floor, promoting a trickery of scale that causes the vehicles to read as though they were diecast miniature trucks in a sandbox. On the image’s upper left, a segment of a dirt road running diagonally compensates for a lack of horizon line and offers some symmetry to contain the composition. The most abstract among the images are the vertical or high-oblique aerial framings, such as “Plate 29” (Fig.22) which captures a desert trench line that runs diagonally from the photo’s bottom right to stop just before the frame’s upper right edge. It is one example among many that show vestiges of abstract aesthetics, which function around thwarted geometries, as lines almost touch or circles nearly complete.

Both Ristelhueber and Mayer urge viewers to appreciate *Fait* for its formal qualities, but as demonstrated by visual investigations teams such as Forensic Architecture, the lengths, widths and circumferences of material traces reveal specific information about both the mechanical and the geopolitical forces of the world. Rather than trying to piece together the parts of the whole in a deliberate way as in visual investigations, Ristelhueber emphasizes abstraction and destabilization by showing a multitude of images through a variety of angles, purportedly from the same area. Devoid of geolocate features that would establish a referentiality between the locations pictured, it is difficult to assemble a global picture of the site through an assemblage of the individual images. Without text, the desert is depicted as an archetype, with the objects scattered across the site acting as signifiers in the assemblage of narrative. Ultimately the desert becomes a screen onto which viewers project the stories that they imagine based on what little

information they have. As photographs, the images in *Fait* hold a documentary status and serve as evidence, and evidence, as Eyal Weizman reminds, cannot operate on its own, but must be supported by description.³³⁵ And, as argued throughout this thesis, aerial photographs are particularly dependent on multivalent support, such as captioning or interpretative text.

While (or perhaps, because) deserts hold a particular pictorial form in the Western imaginary (or among those who have never visited such sites), they are also prone to a prescribed set of cultural perceptions. Notably, says, geographer Catrín Gersdorf, deserts are often considered as lawless extra-territorial spaces, hostile border lands, or regions of alterity.³³⁶ One need only look to cinema or literature to witness this conceptual range. Deserts of the American Southwest are iconic settings for the “lawless” lore of Spaghetti Westerns made famous by producers such as Sergio Leone. In American author Cormac McCarthy’s celebrated collection of Western novels, the *Border Trilogy*, this same region assumes the role of protagonist as villainess as any of the human characters. Middle Eastern deserts (or their geographical “body double” when the “real” thing is too dangerous for Western film crews to access) are often the backdrop to tense counterinsurgency special-ops narratives, as convincing proxies of the mediatized representations of armed conflict that occurs in these regions. Alternately, deserts provide an Orientalist atmosphere to colonial adventures, such as in *The English Patient*, a film adapted from Michael Ondaatje’s novel, whose plot includes the desert mapping project by the National Geographic Society during the North African Campaign of WWII. In all these dramatic applications from Westerns to war films to historical biopics, deserts are often produced as mythical or archetypal

³³⁵ Eyal Weizman, “Ground Truth: Colonization of Climate Change,” Lecture at Sonic Acts Festival: The Noise of Being, Amsterdam, February 26, 2017 <https://www.youtube.com/watch?v=omivukSotb4>

³³⁶ Catrín Gersdorf, *The Poetics and Politics of the Desert: Landscape and the Construction of America* (Amsterdam: Rodopi, 2009), 39. Derek Gregory argues that drone warfare helps to further intensify the notion of lawlessness in a military context through monopolizing the geopolitical loopholes that govern borderlands. Eyal Weizman supports Gregory’s claim in revealing that “desert shoreline” in the Middle East remains active sites of hostilities and frequent targets of drone strikes. See Eyal Weizman, “The Conflict Shoreline.”

spaces and are rarely represented in a way that speaks to the specificity of place. In such films and novels, the expanse and exposure of deserts are used to insert an exquisite atmospheric tension into the human drama that unfolds in these settings.

Gersdorf further offers that deserts are frequently understood through a range of metaphors that conceptualize these sites as garden, as the orient, as wilderness, and/or as a heterotopia.³³⁷ Commenting on this spectrum, Sarah Luria, an interdisciplinary scholar whose research interests involve the intersection of geography and English literature observes that, “These poetics often lead to the politics of the desert, the decisions made to develop it as an irrigated oasis (garden), an aesthetic subject whose captivating aridity offered an empowering contrast to Europe (orient), into national parks to provide a healing expanse of virile white masculinity and meaning (wilderness), and as a contested but also shared borderland space of experiment and hybridization (heterotopia).”³³⁸ Luria notes that coupled with the concept of the desert as “wasteland,” these landscapes are also recognized as harbouring some potentializing force, which through human ingenuity can be made into a space of production (i.e. “wasteland” transformed into “garden”). Ristelhueber’s *Fait* plays heavily on the notion of desert as wasteland, whose burning oil wells give evidence of the potentializing force located beneath the desert surface.³³⁹ As the photos of *Fait* easily assume an archival status, made perhaps more convincing by the monochromatic and silver gelatin finish, they advance a conception of a space whose potential has been exhausted and now lies abandoned.

³³⁷ Gersdorf, 39.

³³⁸ Sarah Luria, “The Art and Science of Literary Geography,” *American Literary History*, Vol. 24, No.1, *Sustainability in America*, (Spring 2012),198.

³³⁹ The next chapter, through an investigation of Fazal Sheikh’s aerial photo series on the Negev Desert, will give opportunity to explore the exploitation of the “potentializing force” of the desert via an afforestation initiative on the part of the Israeli government, in which Ben Gurion sought to make “the desert bloom.”

Aerial Orientalism

According to Ristelhueber, *Fait* originated as a response to an encounter with an aerial photograph of the trenches in the Kuwaiti desert that appeared in the February 25, 1991, issue of *Time* magazine (Fig.23),³⁴⁰ and was, by the artist's own admission, more aesthetically than politically motivated. Ristelhueber explains, "For me, it is vital to do something about these conflicts, and, even if it seems very presumptuous, to ensure that there are works of art by which to remember them. I have taken political positions, and I can be engaged, but I've never mixed that with my work. It's more, for me, about giving form to something that obsesses me, about making a 'work of art.'"³⁴¹ What gets lost in Ristelhueber's declaration of neutrality, is that in using the aerial perspective as the principal pictorial strategy, a political position is established, as this view has long been associated with master views of state, empire, and military power.

Her statement inserts a relative sense of distance between the artist and the subject of war and its specific geographical arena, both of which have been rendered conceptually. Distance is another attribute associated with aerial views, with the ambiguity produced sometimes used tactically by the state or military to dehumanize targets or obscure evidence. It could be said that Ristelhueber too uses ambiguity tactically in *Fait*, to advance her claim of the fallibility of the aerial view.

³⁴⁰ As Laura Kurgan notes, February 25, 1991 was also the day that the Gulf War officially came to an end. On this night, American analysts flying in a Joint Target Attack Radar System (J-STARS) Boeing 707, mapping what has come to be known "the highway of death." Laura Kurgan explains the capabilities of J-STARS as a "radar technology that detects moving ground forces on a battlefield, superimposes those tracks of movement on the ground onto sorted maps and distributes them to attackers in real time." Laura Kurgan, "Kuwait: Image Mapping" in *Close Up at a Distance: Mapping, Technology and Politics*, Brooklyn: Zone Books, 2013), 92.

³⁴¹ Ristelhueber quoted in Katharine Stauble, "Sophie Ristlueber: Of Fact and Fiction," National Gallery of Canada.

Inspired by the strangeness of the aerial photo seen in a magazine, Ristelhueber then undertook the project which brought her to Kuwait that involved contracting airplanes and desert guides for the purpose of putting into form “this desert that was no longer one, that was no longer empty, that was filled by war.”³⁴² The result was a body of work based on pre-conceived ideas or what Ristelhueber often referred to as “obsessions” about the region’s iconic desert landscape, which primarily understood the desert as “empty.” As stated above, this conception of the desert, as well as the motivations and methodologies of *Fait* share many similarities with nineteenth-century Orientalism.

I want to argue that Ristelhueber in fact participates in a twentieth-century version of Orientalism in using the aerial perspective to depict the desert, which leverages ambiguity as a pictorial strategy. As will be shown, ambiguity in the rendering of the deserts of North Africa was a tactic utilized by French and British Orientalist artists alike. Art historians such as John Zarobell and Linda Nochlin, have observed that such ambiguous desert depictions serve as a deviation from Orientalist painting tradition, whose figurative works were invested in realism. However, I advance that landscapes, while participating in the same empirical project as the figurative works in producing the Orient according to a European imagination, landscapes depended on different tactics, privileging ambiguity over detail.

Before entering into a more detailed discussion around the Orientalist landscape tradition, it is worth noting as that Orientalism was an artistic movement that was produced out of a series of military crises beginning with Napoléon’s invasion of Egypt in 1798.³⁴³ As such, Orientalism

³⁴²Ibid.

³⁴³ This event was followed by allied interventions including France Britain and Russia supporting Greek nationalists’ quest for independence from Ottoman Turks in 1827, to the French colonization and conquest of Algeria in 1830. Michael J. Heffernan, “The Desert in French Orientalist Painting During the Nineteenth Century,” *Landscape Research* 16(2), 1991, 37.

and the images produced through its lens, have a nascent connection with war and imperial conquest. These events ignited an intensification of interest in desert landscapes within a developing Orientalist imaginary, inspiring an increase of European scholarship about these former Ottoman lands. As geographer Michael J. Heffernan describes, “in each region, the conquering French armies established ambitious regional surveys to record, in encyclopaedic detail, all that was of interest to western arts and sciences.”³⁴⁴ Such findings, coupled with the promise of exotic and sensual experiences inspired European writers and artists to flock to the eastern Mediterranean and eventually to North Africa seeking inspiration and self-fulfillment.³⁴⁵ That such meticulous geographical and ethnographic records were kept by the French, makes the use of the ambiguity by Orientalist painters to render landscapes of the East, noteworthy. Rather than advancing the specifics of place, of which there was ample record collected by French institutions, these artists were more interested in finding an expression for conflicting European attitudes towards Eastern landscapes.

Along with the much-celebrated figurative works, desert depictions contributed greatly to the Orientalist canon that served as a pictorialization of imperialist attitudes. These desert scenes, contrary to the figurative works, were often rendered in an ambiguous and anti-dramatic fashion. This apparent lack of drama, suggests Heffernan, is perhaps one reason that the significance of landscapes has been generally overlooked in their contribution to Orientalism. This opinion is echoed by Zarobell who argues that landscapes have largely escaped examination within the Orientalist art tradition and within this lack, a fundamental mode of the expression of imperialism through landscape has gone unexamined. Both Heffernan and Zarobell contend that more focused consideration has been placed on figurative works and associated problems relating to identity

³⁴⁴ Ibid.

³⁴⁵ Ibid.

construction.³⁴⁶ So, while considerable attention has been given to a figurative works, among which are examples that Heffernan accurately classifies as voyeuristic representations of voluptuous dancing women pleasing their male audiences, spectacular scenes of arbitrary savagery, or scenes of religious devotion, landscapes have largely remained an aside to the conversation around Orientalist art.³⁴⁷

Heffernan offers that the lack of interest in landscapes could be attributed to the fact that the physical landscapes of the Orient, with the desert being its most archetypal, are seen as homogeneous, monochromatic and sparse, and as such lack the human drama that dominates Orientalist figurative images. Rather than being rendered with meticulous realism, as was Jean-Léon Gérôme's celebrated painting *The Snake Charmer* (1879) for example, which includes such details as broken Turkish tiles on the rear wall against which the charmer's rapt audience sits,³⁴⁸ Heffernan observes "European images of the desert, as revealed in French Orientalist paintings, and in literary and scientific accounts, indicate a fundamental ambiguity towards the arid regions of the Middle East and North Africa."³⁴⁹ Ambiguity as a pictorial tactic in the depiction of deserts can also be found in paintings by English Orientalists, such as the pastel-hued atmospheric paintings of Augustus Osborne Lamplough.

Instead of emphasizing detail, as did figurative artists, to suggest a sense of presencing as though these painters were the sole Europeans to witness the scenes they painted, Orientalist depictions of the desert portrayed them in a quintessential fashion so that one sector of the desert represented within the frame of a given painting came to stand for the desert in its entirety.

³⁴⁶ John Zarobell, "Abstracting Space, Remaking the Landscape of Colonial Algeria in Second Empire France," in *Empire of Landscape*, (Philadelphia: Pennsylvania State University Press, 2010), 4.

³⁴⁷ Heffernan, "The Desert in French Orientalist Painting."

³⁴⁸ As noted by Linda Nochlin, such details were used to advance the idea of the Orient as decrepit and ruinous. Linda Nochlin, "The Imaginary Orient," in *Art in America*, May 1983, 119 -191

³⁴⁹ Heffernan, "The Desert in French Orientalist Painting," 42.

Heffernan offers that ambiguity served as a useful mode of expression applied to landscapes in signifying the complexity of European attitudes towards this geography: “The harsh and relentless plains of the desert, blasted into a scorched and horizontal submission by a pitiless sun, provoked two, quite contrary responses from Europeans.”³⁵⁰ For some, he explains, the desert was the ultimate symbol of desolation and infertility, a landscape of death.³⁵¹ This perception of place as desolate was not totalizing, but was a view invested with an enterprising optimism that “Europe could reclaim the wilderness,[and] rescue it by the forces of civilization and progress and restore it to a mythical former fertility and prosperity.”³⁵² While the second dominant European attitude towards deserts as identified by Heffernan, saw it as a space whose expanse and ahistorical simplicity offered a form of solitude that promoted spiritual cleansing countering the overstimulation of the modern cities of Europe.

Heffernan emphasizes that these two images of the desert, while demonstrative of the general European ambiguities towards the Orient were not reified into opposing schools of thought, “Rather, traces of both perspectives can generally be identified within a single image or text by a single artist or writer. Both these images of the desert were intertwined within a single European discourse about the landscape of the Orient. Moreover, though contradictory, both perspectives of the desert could be reconciled within a broad imperial vision.”³⁵³ The desert was therefore portrayed as an element of a comprehensive imperialist project—a space to be regenerated and owned in image and in terrain.

The pictorial depiction of deserts as desolate and empty, its sparse features showing evidence of the ravages of wind and sun, echoed the oft-portrayed architectural degradation of

³⁵⁰ Heffernan, “The Desert in French Orientalist Painting,” 38.

³⁵¹ *Ibid.*

³⁵² *Ibid.*, 42.

³⁵³ *Ibid.*, 38.

Oriental cities which advanced the notion that the Orient could be salvaged from ruin by European civilization. Meanwhile its barrenness provided a spiritual counterbalance to the ornate accoutrements of modern European life. “In this way,” states Heffernan, “ambiguity, instead of breeding confusion and vacillation, became a source of imperial power. Europeans could, and did, profess admiration for a separate and distinctive Orient while at the time promoting the necessity of a transforming and beneficial European imperial presence in the Orient.”³⁵⁴

While figurative artists such as Jean-Léon Gérôme and Eugène Delacroix in their attentiveness to realism drew upon what Nochlin refers to as “an iconic distillation of the Westerner’s notion of the Oriental couched in a language of naturalism,”³⁵⁵ certain nineteenth-century French painters such as Gustave Guillaumet and Eugène Fromentin, and English painter Augustus Osborne Lamplough used ambiguity in their depiction of desert landscapes to advance notions of the imperialist project that underpinned Orientalism. In his study on Orientalist landscapes, Zarobell observed that painters such as Fromentin and Guillaumet rendered the desert as a “symbolic construction of a land outside of time (history) and outside of civilization (society/progress),”³⁵⁶ a comment that was frequently extended to figurative works in the Orientalist canon.³⁵⁷

Take for example Guillaumet’s *The Desert* (1867) (Fig.24), an expansive tableau that seems to make atmosphere its subject, rather than any manifestly physical attribute. Here Guillaumet has used the horizontal register and an unadorned expansiveness to amplify the sense of the infinite, to promote the depiction of one sector of a desert (likely in Algeria) as representative of the desert as a conceptual space. These effects, says Zarobell, are achieved through painterly

³⁵⁴ Heffernan, “The Desert in French Orientalist Painting,” 38.

³⁵⁵ Nochlin, “The Imaginary Orient,” 119.

³⁵⁶ Zarobell, “Abstracting Space,” 136.

³⁵⁷ See Linda Nochlin, “The Imaginary Orient.”

techniques such as “the scumbling of paint in the sky and the use of light strokes of dry paint laid horizontally over darker, grey-green tones to achieve the illusion of light on a horizontal plane.”³⁵⁸ Adding to the painting’s atmospheric quality, is its pastel palette, which is mostly dominated by a pale yellow of the sky that occupies two-thirds of the canvas. The yellow descends into pale pink at the horizon line and is echoed by a hazy line of yellow in the bottom third of the painting, which defines a ridge of sand. The hued effect suggests that this scene was captured at the liminal hours of dawn or dusk, further emphasizing the solitude of the moment. The most distinctive feature in the composition is the decomposing carcass of a camel in the foreground, its skeleton presumably laid bare by the scorching sun and sand-filled wind, neither of which is evident in this painting which is evocative of total stillness.

The Desert holds evidence of this landscape’s double significance held by Europeans, as defined by Heffernan. A tension has been created between the foreground and background, as the sunbaked skeleton of the camel whose head points towards to the viewers, suggests a journey forward definitively thwarted, while the ambiguous figures on the horizon’s edge in the background (a mirage or a caravan of riders, it is not clear) act a beacon of progress to be found in a contrary direction.³⁵⁹ In a movement away from the foreground symbol of death there is an optimism implied that the future that will be salvaged through progress. In the witnessing of this quiet scene caught on the day’s edge viewers are encouraged to sense the almost spiritual reverence of the solitude associated with the desert that serves as an antidote to the constant cacophonous transformation of European civilization.

³⁵⁸ Zarobell, “Abstracting Space,” 136.

³⁵⁹ Heffernan observes that this symbolism is made even more potent when imagining that the figures on the horizon line are position northward.

Zarobell claims that the painting itself and its symbolic references continue to inform viewers about the depiction of the outer reaches of the French empire in the 1860s (although he stops short of saying how), proclaiming that the emptiness of this landscape is its most pictorial legacy. The emptiness, he opines, is the aspect of the picture that demands interpretation in that it is not only meaningful in itself but has the potential as well to produce meaning.³⁶⁰ Guillaumet's bold utilization of seemingly vacant space in *The Desert* was lauded at the time of its making by French critic Théophile Gautier at his "Salon de 1868." Gautier celebrated Guillaumet's portrayal of limitless space that fulfilled European expectation of the place, exclaiming, "Never has the infinity of the desert been painted in a simple, more grandiose or more moving way."³⁶¹

Impressed by its supposedly audacious emptiness, Zarobell argues that *The Desert* could be described as "a pure landscape: there are no traces of human presence here, and the space is rendered in an direct and uncomposed manner."³⁶² These attributes according to Zarobell qualify the painting as a "radical proposal for what can constitute a landscape."³⁶³ The comment points to established European standards that defined the landscape tradition, as a culturally informed arrangement of space, which tended to include a variety of features to encourage the eye to travel.

However, I must challenge Zarobell's choice of adjective in describing Guillaumet's depiction of space as "uncomposed." In terms of composition, it is in fact quite strictly arranged according to a stratified logic; its sparsity making it more comparable to Friedrich (and by extension to Rothko), than say a classic landscape by Poussin. The composition's layered horizontality and economy of features cause *The Desert* to bear remarkable resemblance to Caspar

³⁶⁰ Zarobell, "Abstracting Space,"138.

³⁶¹ "Gustave Guillaumet: *The Sahara*," *Musee d'Orsay*, Accessed Aug. 27, 2021 <https://www.musee-orsay.fr/fr/oeuvres/le-sahara-9121>

³⁶² Zarobell, "Abstracting Space,"137.

³⁶³ *Ibid.*

David Friedrich's *Monk by the Sea* (ca 1810) (Fig.25), a pared-down painting that invited similar critique regarding its radicality within the landscape tradition. Both works are expressions of the sublime enormity of nature, whose limitlessness is amplified by minimal human presence. However, the expansiveness of Guillaumet's desert compared to the atmospheric oppression of the fog in Friedrich's maritime scene invite two different moods among viewers. In the former painting there is a sense of optimism in the presence of the figures on the horizon line, while in the latter, the heaviness of the atmosphere that threatens to consume the small figure on the shore carries a sense of foreboding.

Such atmospheric pictorial devices borrowed from the Romantic period, typical of the Friedrich's work can be found in other Orientalist landscapes, such as those by the English painter Augustus Osborne Lamplough. In *Man Riding a Camel in the Desert During a Sand Storm* (1860) (Fig.26)³⁶⁴ for example, Lamplough, like Guillaumet uses a pastel palette to depict a caravan of camels crossing a stretch of desert, advancing from background to foreground. A swirling sand cloud consumes the background, threatening to swallow the riders so that only the lead rider is distinctly defined. The effect of the windstorm and the space it occupies on the canvas, eliminates the painting's middle ground, and pushes toward the motion of the painting towards the foreground. This thwarting technique was often used by Friedrich wherein he would place an obstacle in the paintings foreground to intensify that sublime anxiety of not being able to see beyond the threshold.³⁶⁵

Taking into account the mandates and styles of Orientalist desert depictions that used ambiguity as a fundamental tactic to represent the range of European attitudes towards the Orient,

³⁶⁴ Problematically, this painting is dated 1860, yet Lamplough is said to have been born in 1877. I can find no other date for this painting and continue to research the issue.

³⁶⁵ See for example, Caspar David Friedrich, *Bushes in the Snow* (ca. 1827/28)

which in all cases carried the notion that this region of the world was both inferior yet valuable to the European empire, similar attributes can be found in Sophie Ristelhueber's *Fait*. In making ambiguity a principal concept in the work, which is amplified through the aerial perspective, Ristelhueber is using similar strategies to advance similar notions of the desert as did the Orientalists of the nineteenth century. In *Fait*, Ristelhueber identifies the strangeness of the desert in that the fact that its emptiness has been "filled" with the marks of bomb blasts and abandoned military equipment. Such scarring could be seen as proxy twentieth-century signifiers describing a landscape of ruin as did the crumbling architectures or sunbaked bones of animal carcasses in the nineteenth-century Orientalist depictions of the desert. Likewise, the horizontality and homogeneity of the space, and the lack of titling are used to promote ambiguity as a blank screen onto which viewers can project their own meanings to produce speculative narratives. The visual signifiers of war – hollow artillery shells, rusting military vehicles, and snaking trenches act as poignant markers of a temporal past, while an utter stillness in the images suggest an ahistorical quality, as though this stretch of desert were museum-like and would remain in this exact form into perpetuity.

Many of the critiques just offered on Orientalist landscapes can be extended to Ristelhueber's *Fait*, in her claim that as an artist, she is permitted to privilege the creation of art above all else, which can live separately from political sentiment. A symptom of this problem arises early in the project in the artist's denial that the photographs of a desert landscape ravaged by acts of military conflict are "not about war," as she dismisses the situation in Kuwait as a quibble over oil.³⁶⁶ Referring to another project, "WB" (West Bank) (2005) a series on Palestine, in which landscape is used as a metaphor of conflict, Ristelhueber justifies this universalist approach: " ...

³⁶⁶ Sophie Ristelhueber – Documenting Traces of War," *Tate*, Jan.22, 2015.
<https://www.youtube.com/watch?v=PBsgm4OBOfE>

while working, I forget the very particular context I am in. It happens to be the West Bank, but at one point, for me and in my imagination, it is only a new expression of humanity's violent destruction. I am not denouncing someone or the other, I am in my metaphor."³⁶⁷ The universalist metaphor continues in *Fait*, with the only mention of Kuwait in the book is as a subtitle diminutively tucked beneath "Fait" on the cover, and in the book's epitaph. This generalization is supported in curatorial writing that describes Ristelhueber's position as "neutral."³⁶⁸ In choosing to focus her interrogation of the ambiguity of the aerial view as a conceptual exercise, which is paradoxically a perspective often advanced as "empirical" or "objective," seems not invested in reality at all. As advanced by Ristelhueber's critique on "how little we see," should not the danger of the potential ambiguity made possible by aerial perspectives be that these confusions of scale, these puzzling abstractions, obfuscate the *reality* of war – as is argued by critics of remote drone warfare and was observed by commanders and pilots in WWII?

Arriving in Kuwait seeking to produce a pre-formed vision of a project that makes landscape its subject and describing such motivations as an "obsession" (as Ristelhueber repeatedly does) exemplifies Edward Saïd's observation that the "Orient" is in fact a production of the West, conceived of as a place to be tamed, and a map to be reordered. Saïd argues that the "Orient" has assumed a semi-mythical status "since Napoleon's invasion of Egypt in the late eighteenth century, and has been made and remade countless times by power acting through an expedient form of knowledge to assert that this is the Orient's nature, and we must deal with it accordingly."³⁶⁹ It is this semi-mythical status that endures today and continues to entice

³⁶⁷ Quoted in Anne Thomas, "Metaphors and Imagination: Sophie Ristelhueber's 'WB' Series, National Gallery of Canada, Sept. 5, 2019. <https://www.gallery.ca/magazine/your-collection/at-the-ngc/metaphors-and-imagination-sophie-ristelhuebers-wb-series>

³⁶⁸ Katharine Stauble, "Sophie Ristelhueber: Of Fact and Fiction," *National Gallery of Canada Magazine*, Nov. 26, 2015. <https://www.gallery.ca/magazine/exhibitions/of-fact-and-fiction-sophie-ristelhuebers-fait>

³⁶⁹ Edward Saïd, *Orientalism*, xviii

contemporary artists and writers and finds frequent representation in Hollywood films. Ristelhueber's photographs offer but one exercise of "remaking" the Orient, while forming a catalogue of images attesting to the punitive prerogatives mentioned by Saïd, through a survey of a heavily shelled and despoiled desert in a montage of war's after-effects—offering that Kuwait was "dealt with accordingly" by American and European Coalition forces during the First Gulf War.

The lack of titling and supporting descriptive text, as well as the technical strategies involving perspective and scale aligns Ristelhueber with Canadian photographer Edward Burtynsky, who is well known for his large-scale, colour prints of environmentally devastated landscapes. Burtynsky's photographs are also minimally titled – sometimes they include place names, while at others the title is restricted to proper nouns. For example, a series of photographs entitled *Nickel Tailings* (1996) (Fig.27) depicts the residue of nickel smelting industry in Sudbury Ontario, are exhibited devoid an contextual information to assist viewers in understanding the scene they are witnessing. These undeniably gorgeous large-scale colour prints showcasing a vivid orange fluvial pattern cutting across blackened ground could be seen as "electric" versions of Ristelhueber's monochromatic *Fait*.

The series bares similarities to that of *Fait* in that the sequence of photographs are taken at angles ranging from low oblique to horizontal, which similarly activates a confusion of scale, so one cannot gauge the distance from which the scene was captured or establish a firm sense of orientation.³⁷⁰ Commenting on Burtynsky's destabilization of the ontological character of the photograph, media scholar Gerda Cammaer offers that the artist deflates "the evidential real in

³⁷⁰ Gerda Cammaer, "Edward Burtynsky's Manufactured Landscapes: The Ethics and Aesthetics of Creating Moving and Stilling Moving Images of Ecological Disasters" in *Environmental Communication: A Journal of Nature and Culture* No.1 (1):126.

favour of aesthetic value,” and concludes that “his emphasis on the aesthetic deprives the images of any other reading, be it an ecological, social, or cultural one.”³⁷¹ This emphasis on the aesthetic is further encouraged by a lack of supporting text that would give a clear indication of the context. On the artist’s website the captioning adjacent to these images, references Fauvism as a tool for looking, rather than informing readers and viewers of the concrete environmental consequences of this industrial enterprise.³⁷² This strategy that calls upon art historical references for contextualization is reminiscent of the strategy employed by Mayer in reference to *Fait*.

Burtynsky’s self-proclaimed neutrality and emphasis on aesthetics work to deprive his art of the potential that T.J. Demos locates in environmentally engaged art which encourages a “rethinking politics and politicizes art’s relation to ecology,” while revealing “nature’s inextricable binds to economics, technology, culture and law at every turn.”³⁷³ Indeed as the environment moves ever closer to an irreversible climate-change tipping point, such reflections become increasingly urgent and should cause an intensive contemplation on how aesthetics, a concept whose colloquial interpretation is associated with notions of extravagance, fits within a dialogue on sustainability. If one claim of art is that it can advance knowledge then it should be supported in this endeavour through acts of description and contextualization by curators and art historians, rather than operate as a performance of metaphors in which one art form points to another. Perhaps it could be said that art has more permission to speak for itself, than does evidence. However, when art shares the role of evidence, as both Ristelhueber and Burtynsky’s work do, it requires polyvalent support to contextualize it, even or especially when ambiguity is used as a strategy of delivery.

³⁷¹ Ibid.

³⁷² Edward Burtynsky. <https://www.edwardburtynsky.com/projects/photographs/tailings>

³⁷³ TJ Demos, *Decolonizing Nature: Contemporary Art and the Politics of Ecology* (Berlin: Sternberg Press), 8.

Trevor Paglen: Information in Ambiguity

In the final section of this chapter, I turn my attention to Trevor Paglen, a Berlin-based American artist who is insistent on the necessity of a new visual language, and whose work effectively synthesizes many of the topics discussed over the course of the chapter. Remoteness and ambiguity, as they contribute to classified US military programs are topics of sustained interest for Paglen, who, like Sophie Ristelhueber, takes up optical strategies (the aerial perspective being one) as a means of interrogation. A significant point at which the practices of the two artists diverge is that Paglen seeks the limits of visibility in a bid to surpass these boundaries, rather than accepting or promoting ambiguity as a conclusive state as does Ristelhueber. Instead, Paglen looks at the politics, perspectives, and the material limitations that govern the thresholds of visibility which restrict people from seeing how power operates.

Calling attention to the empty promise and false promotion of technologies as “empirical” or “objective,” Paglen reveals the militarized historicity of instruments and practices of seeing and how obfuscation can be used towards tactical ends. Seeing the world in a particular historical moment, insists Paglen, is an effortful process, as twenty-first century landscapes are often articulated by invisible infrastructures. This reality, says Paglen necessitates recognizing the difference between machine eyes and human eyes, as the majority of the world’s images are now produced by machines, for machines, with humans cut out of the loop.³⁷⁴ It suffices to say that in a world increasingly articulated by invisible infrastructures, aerial operations, and signal communication, one cannot expect to find environmental information neatly arranged on a horizon line. Linear perspective since the Renaissance had achieved such a world ordering in the

³⁷⁴ Trevor Paglen, “Machine Eyes, 2014,” *Trevor Paglen*, Eds. Julia Bryan-Wilson et al, (London: Phaidon, 2018), 140.

horizontally oriented landscape image, but part of Paglen's project involves challenging this ordering, by asking what form twenty-first-century landscapes take.

As an artist with a Ph.D. in geography, Paglen approaches landscape with cartographic sensibilities that make him attuned to the relationships between the surface of representation and the surface of the world. Paglen argues, using a cartographic lexicon, that "the geography of seeing is changing," and it is such processes of transformation that have inspired his longstanding interest in notions of the visible and the invisible, which intersect with landscapes both physical and digital. These oppositions undergird his work as an artist, as he asks: "What happens to an image when you push it to the point where it breaks? When you push vision to the point where it collapses?"³⁷⁵

The intent in "breaking" images goes beyond the aesthetic, as experimenting with technologies of vision becomes a way for Paglen to interrogate systems of state control, as he plays with what Julia Bryan-Wilson describes as the limits "between knowing and not-knowing, between the perceptible and the undetectable, between secrecy and revelation, between the rational and the absurd."³⁷⁶ This line of artistic inquiry and its motivations recall Weizman's "threshold of detectability" as a potent space of "counter-forensic" investigation, where things exist on the edge of invisibility. It could be said that Paglen's work consistently walks this line, as he explores the limits of material, instruments, environment, democracy, and vision (human and machine) towards the formation of a more conscious worldview. Through a range of projects founded on intensive research, Paglen insists that one must put effort into acts of seeing. He candidly states, "It turns out that learning is how to see the world around us is pretty hard to do. Everyday life is sculpted and modulated by forces that are usually quite invisible to us, whether they're physical

³⁷⁵ Trevor Paglen, "Photographing Secret Sites and Satellites," Creators, Dec.5, YouTube, 2013
<https://www.youtube.com/watch?v=9IgfU0VwdkQ&t=115s>

³⁷⁶ Julia Bryan-Wilson, "Trevor Paglen at the Limit" in *Trevor Paglen*, Eds. Lauren Cornell, Julia Bryan-Wilson, Omar Kholeif, (London:Phaidon, 2018), 40.

infrastructures like satellites or undersea cables, or whether they're abstractions like the economy, the law, the political process and so on (saying that they are abstractions doesn't mean they are not real)."³⁷⁷

While Sophie Ristelhueber's *Fait* aimed to show "how little we see through satellite imagery and technical data," Paglen's practice proposes that the "little we see" is partially due to vertically ordered infrastructures of surveillance that are unseen and that impose invisibility. Networked technologies, which support or amplify systems of power demand that "seeing" becomes an insistent and informed practice. An aspect of this exercise, argues Paglen, involves knowing what to look for and understanding that power can be enacted in "atmospheric" ways, such as when satellites interact with ground or aerial sensors, or data and signal collaborate within algorithms, whose design not unfrequently exceeds the understanding of its engineers. Paglen also thinks that colloquial references to technology that gesture towards misleading metaphors further contribute to misconceptions of technology. For instance, he says that referring to the internet as a "cloud" or a "web" obscures the materiality of a system made of cables and servers, which has been turned into the greatest tool of mass surveillance in the history of mankind.³⁷⁸ Part of Paglen's prerogative is to rematerialize the technologies of the ubiquitous and invisible infrastructures and networks that articulate modern life and to reveal the often surprising ways in which these systems are in relationship with the environment.

His photo series, *Undersea Cables* (2015) (Fig.28), for example, challenges the conception of the internet as a purely atmospheric operation, by picturing underwater cables. To produce this project, Paglen learned to scuba dive to photograph networks of fibre-optic cables, which sit

³⁷⁷ Lauren Cornell in conversation with Trevor Paglen in *Trevor Paglen*, Eds. Julia Bryan-Wilson et al., 13.

³⁷⁸ See: The Creators Project, "Trevor Paglen's Deep Dive Web Dive: Behind the Scenes," August 30, 2016. <https://www.youtube.com/watch?v=h7guR5ei30Y>

collecting algae on the sea floor. These unassuming assemblages of wires serve as the conduits through which 98% of the world's data travels; if located these physical systems can be tapped and the data intercepted. This series is accompanied by another titled *Cable Landing Sites* (2016) (Fig.29)—diptychs that consist of pictures of unassuming landscapes such as beaches and shorelines on one side, and on the other, nautical charts and collages of documents that contextualize these landscapes.

This information helps bring a new perspective to these sites. Despite their tranquil surface appearances, these are in fact areas of high security where global internet cables converge and can be easily tapped by such agencies such as the NSA. Making work that troubles popular conceptions of surveillance, by showcasing what the networks look like, or how they operate, is part of Paglen's attempt to see the historical moment in which one finds oneself in. His extended artistic project offers multiple exercises that challenge viewers to consider: "How do you see the world around you?"³⁷⁹

Art historian Julian Stallabrass identifies the modalities at work in Paglen's oeuvre as a friction-filled confluence of the sublime and Theodor Adorno's "negative dialectics," as the artist questions how best to engage with or represent aspects of the world that he admittedly himself struggles to understand. Adorno's theory of negative dialectics suggests that since concepts are not identical to their respective objects, they remain incapable of defining them. In Paglen's work, this uneasy proposition meets with the sublime which Paglen recognizes "is often used for conservative purposes: to frame or manage a common social fear and offer it up for consumption."³⁸⁰ Drawing from strains of ambiguity within both negative dialectics and the sublime, Paglen's artistic output,

³⁷⁹ See Julian Stallabrass, "Negative Dialectics in the Google Era: A Conversation with Trevor Paglen," *October* 138, Fall 2011, 3-14.

³⁸⁰ Paglen quoted in Stallabrass, "Negative Dialectics," 13.

by the artist's own admission "often has to do with trying to represent that epistemological-political gap or in-between space, or that moment of incomprehension."³⁸¹

Understanding the inadequacies of representation, a conundrum arises in attempting to anchor production to this very lack. The problem is further complicated by the fact that both concepts and objects change over time, "thus, every concept has a history and is embedded with a history."³⁸² Paglen is ever sensitive to these compounding histories, recognizing that each mode of material that he uses, such as film has its own history associated to war and surveillance, while his cameras are descendants of instruments which in the past were used to survey the landscape in colonial mapping projects.

Acknowledging the human/machine entanglement that describes networks of vision (and surveillance) wherein satellites, drones, CCTV cameras, AI-driven facial recognition technologies, are in constant communication as part of a global dragnet, Paglen argues that the neutrality of technology is an impossibility. His work, through various strategies and media, sets out to elucidate this claim. Part of the so-called neutrality of technology is carried through its intentional infrastructural invisibility, as a mandate of modernity which advances that communications networks, for example, be made as seamless and unobtrusive as possible. Indeed, it often takes the rupture of that technology to make its physical articulations visible, as when Wi-Fi service fails. Paglen uses this attention-grabbing strategy of "rupture" to push images to their breaking point, as instruments and materials are made to operate at their limits, with the blurred images produced as a result acting as interrogatory prompts which encourage a closer looking.

Invisibility, which is a primary character of domestic "remote" technology such as Blue Tooth, or a Wi-Fi signal, has been marketed as an increasingly desirable attribute, which constantly

³⁸¹ Paglen quoted in Stallabrass, "Negative Dialectics," 13.

³⁸² Ibid.

raises consumer expectation that tech should be ever-less encumbering. This desire inspires new markets of accessories and systems to accommodate novel capabilities (think: air pods, cryptocurrency, e-transfers). With such developments and the behavioral adaptations they inspire, surveillance disguised as entertainment or convenience makes unobtrusive advances. In the networked world, many people seem willing to accept the invasive data mining by companies such as Amazon and Google as the price that must be paid for the convenience of armchair shopping or navigating the physical or online world. And, with the monopoly these companies hold on, for example, the book market, as in the case of Amazon, and wayfinding, in the case of Google, people are often given little choice but to participate in these asymmetrical schemes, in which big corporations profit from the intimate information of individuals.

While Paglen's work has spanned surveillance topics such as the internet (*NSA- Tapped Undersea Cables, North Pacific Ocean*, 2016), drones (*Drone Vision*, 2015), AI (*Comet (Corpus Omens and Portents) Adversarially Evolved Hallucinations*, 2017), and satellites (*Prototype for a Nonfunctional Satellite*, 2013), this orientation began early in his career, with an investigation of classified military installations located in remote desert locations. In these initial forays in the early 2000s, Paglen would twice yearly make expeditions with friends and acquaintances to these otherwise unremarkable sites to demonstrate the frisson between the everyday and the extraordinary within contemporary America.

This work set the foundation for a now decades-long series of investigations into the relationships between technology and landscape, with the desert playing a principal role in many of these exercises. In these works, Paglen is sensitive not only to the history and militarization of the technologies, but of the geographies of the American Southwest as well. Since the early twentieth century, desert regions of Nevada, for example, have played important roles as proving

grounds for technologies of war (including the testing of the atomic bomb), while deserts in California and New Mexico have long been considered as hostile areas associated with illegal migrancy.

In making art about and in these desert regions, Paglen is conscious that the images he produces are in dialogue with the landscape and survey photography of the nineteenth century by the likes of Timothy O'Sullivan, Carlton Watkins, and Ansel Adams. Paglen's conversation with these artists deepens with the revelation that iconic early photographs of the American Southwest were essentially part of an imperialist mapping project, funded by the US Department of War. "In a very real sense," says Paglen, "O'Sullivan and the other Western landscape photographers were to the nineteenth century what reconnaissance satellites are to the twentieth and early twenty-first century."³⁸³ Here Paglen observes how the landscape art historical tradition intersects with the military tradition of geographical surveys, and as such these frontier photographs hold valuable qualitative and quantitative information. This collaboration between art and cartography in the early Western frontier photography, may be an early example of a phenomenon now too easily metabolized through the ubiquity of such interfaces as Google Earth, whose images are produced through the cooperation of military and commercial initiatives and marketed as "empirical" documents of the world.

Paglen argues that secret reconnaissance satellites taking pictures of the ground below, are as much a part of the tradition of American landscape photography as are the images produced by 19th-century Western landscape photographers.³⁸⁴ Indeed, I support this argument, which inspires much of this thesis' investigation into how aerial images of landscape are assimilated into visual

³⁸³ Trevor Paglen quoted in (Eds.) Bryan Wilson et al., *Trevor Paglen*, 130.

³⁸⁴ "Trevor Paglen on the Secret History of Early Yosemite Photography," *SF MOMA*, Accessed August 27, 2021, <https://www.sfmoma.org/watch/trevor-paglen-on-the-secret-history-of-early-yosemite-photography/>

culture and into the more extended continuum of art history. A major argument advanced by Paglen is that technology cannot be detached from its usage and the forms of power it was designed to amplify. Following this logic, aerial photographs cannot be decoupled from their military origins, any more than landscape painting can be detached from its colonial past. Paglen says,

It is not a coincidence that these landscapes [of the American Southwest] were also some of landscape photography's greatest proving grounds. 'Taming the west' meant bringing symbolic and strategic order to blank spots on maps through surveillance, imaging and mapping. The patriarchs of Western photography – Carleton Watkins, Eadweard Muybridge, Timothy O'Sullivan and others – all played a part in asserting control over the landscapes they drew into their cameras.³⁸⁵

Drawing from and calling attention to this pictorial tradition, Paglen then uses his camera to reveal the complicated histories invested in it. For example, the chromogenic print, *Keyhole Improved Crystal from Glacier Point (Optical Reconnaissance Satellite USA 186)* (2008) (Fig.31), includes the conventional trappings of rock and sky and horizontal framing as in the landscape images of Adams or Muybridge, which easily place it within their shared pictorial tradition. The image depicts a mountain peak with a distant range forming the horizon line is composed of pale graduations of grey – darker near the bottom, and lighter at the top – with a soft pink line illuminating the horizon that cuts almost across the middle of the photograph.

At first glance, it is a familiar framing of an iconic landscape, however, a closer inspection reveals a self-conscious referencing that suggests that the relationship is not as comfortable as the surface reading might suggest. In the sky are streaks of light, which are in fact, imaging reconnaissance satellites, which include a family of satellites known as the Keyhole series. Launched by the US National Reconnaissance Office (NRO) in the mid-seventies, early iterations of these satellites used high-speed films specifically designed by Kodak for reconnaissance

³⁸⁵ Trevor Paglen quoted in Bryan-Wilson et al., *Trevor Paglen*, 130.

missions, a fact that gives but one example of the complexity of histories invested in a single image produced by these instruments.³⁸⁶ Conscious of these relationships, Paglen highlights the relationality involved in the process of image making: “In taking a picture of another camera or photographer, if you will, that’s in the sky, that is another descendant of that same tradition and I am being photographed by that same tradition, at the same time that I am photographing it. So it’s a bit of triple gamer in terms of photography, a way of having fun with it.”³⁸⁷

Tongue-in-cheek humour is one tactic that Paglen has called upon in expressing his disdain for the mastery implied in the aerial view, with drones playing an important site of interrogation of the aerial perspective. In discourses around modern and contemporary aerial warfare (or warfare in general), critical attention is often given to the technologies of war, however, less discussion occurs around the participation of landscapes within this aerial visual regime. Paglen, whose thinking is equally invested in history as it is geography has recuperated this conversation, recognizing that early visioning instruments have contributed as much to the production of place as they have to the innovation of new technologies.

In the rapid pace of technological innovation in which new devices are constantly designed, or updated innovations of past instruments find new application, drones are an example of a technology that has maintained an enduring stronghold on the term “new,” despite the fact that they have been used in a military context since WWI. Through constant innovation that pushes unmanned aerial vehicles towards autonomous operations, these tools and the skewed geopolitics governing their usage continue to play a significant role in the production of “remote” landscapes.

³⁸⁶ Bryan-Wilson, *Trevor Paglen*, 130.

³⁸⁷ “Trevor Paglen on the Secret History of Early Yosemite Photography,” *SF MOMA*, Accessed August 27, 2021, <https://www.sfmoma.org/watch/trevor-paglen-on-the-secret-history-of-early-yosemite-photography/>

Deserts are inviting geographies for military airbases and drone staging areas in that their open topographies can accommodate air strips, while their remote locations and the “hostile” climatic conditions make them uninviting public destinations. For example, the primary and most notorious UAV control base in the US, Creech Air Force Base (AFB) (Fig.32) is located in Indian Springs, Nevada, approximately thirty minutes from the “desert miracle” of Las Vegas. Now a pivotal control hub of contemporary aerial technologies, this desert region is invested with an industrialized legacy of war. The site holds a history of wartime innovation, situated as it is near the Nevada Test and Training Site (NTTS), the infamous region home to both atmospheric and underground testing of nuclear weapons between 1951-1992, as a project of the Atomic Energy Commission established by the American government following WWII. However, the roots of the militarized history of the region predates this era as Creech AFB was initially established in response to the aerial attack on Pearl Harbour in 1941, an event which propelled the US into the Second World War. By the beginning of 1943, the base was used as a diversion airfield and for air-to-air gunnery training.³⁸⁸

Creech’s legacy as a major centre of remote tactical operations began in December of 1996, on the heels of the final nuclear testing events, with the first flight of the RQ-1 Predator remotely piloted aircraft. A few years later, in February of 2001, another defining moment in the history of the base occurred when on the Nellis AFB Range, 50 miles from Creech AFB, a Predator drone conducted the first successful firing of the Hellfire missile. A statement on the official website of Creech AFB concretizes the role of the desert as a critical participant in the forward pushing high-

³⁸⁸ “Military Installations,” *U.S. Department of Defense*, <https://installations.militaryonesource.mil/in-depth-overview/creech-afb>. The U.S. Department of Defense defines a diversion airfield (also known as a “divert field”) as, “an airfield with at least minimum essential facilities, which may be used as an emergency airfield or when the main or redeployment airfield is not usable or as required to facilitate tactical operations. “Department of Defense Dictionary of Military and Associated Terms,” April 12, 2010, https://irp.fas.org/doddir/dod/jp1_02-april2010.pdf

stakes historiography of military ingenuity as the drone was elevated “from a reconnaissance platform into an offensive weapon, [which] would, in a few short years, transform Indian Springs from a center of support to a center of operations reaching far beyond the horizons of the Nevada desert.”³⁸⁹ Serving as the landscape that hosted the milestone accomplishments of the first flight, payload delivery, and mission of remotely piloted aircrafts, this desert of the American Southwest, made iconic in the nineteenth century by photographers such as Muybridge and Adams again reasserts itself as an essential geographical feature in the development of aerial reconnaissance and warfare.

The secretive or classified nature of the aerial projects developed in these landscapes reveal the manner in which desert landscapes have been dominated by military-industrial ambitions, thereby claiming and subsequently producing these geographies in the American imaginary as classified, or even invisibilized spaces.³⁹⁰ Area 51 located in the expanse of the Nevada Test and Training Site (also home to Creech AFB) is perhaps the most notorious example of a geographical space that is inscribed in the collective imaginary of the U.S.. True of “remote” classified regions whose topographies become etched in the imaginary with an almost mythological zeal, the potency of Area 51 is generated through an absence of information about the activities that take place there, its infamy resting on the belief that the government is reverse engineering alien space craft and experimenting on alien life forms in underground laboratories located on-site.

A greater understanding of the primacy of the desert within the network of aerial technologies, might be achieved by picturing, for example, a contemporary military drone control

³⁸⁹ “History of Creech Airforce Base,” *Creech Air Force Base*, May 16, 2013, <https://www.creech.af.mil/About-Us/Fact-Sheets/Display/Article/449127/history-of-creech-air-force-base/>

³⁹⁰ These classified air spaces are deliberately unmarked in a cartographic context and become what Trevor Paglen calls “blank spots on the map.” Trevor Paglen, *Blank Spots on the Map: The Dark Geography of the Pentagon's Secret World*, (New York: Berkley 2010).

base of Creech AFB in the Nevada Desert, next to the Arabian Desert in Yemen,³⁹¹ a noted target of American drones. This pairing can be further refined by placing these times and places within the greater continuum of aerial weaponry and surveillance, recalling that, for example, tactical aerial reconnaissance was refined in the Western Desert of Egypt by the British Royal Air Force in 1944.³⁹² An assemblage of these geographies over time amasses a sum of evidence that aerial worldviews have been consistently produced through a collaborative lens of colonial and military interests, and that landscapes continue to hold the physical registers and historical legacies of these agendas.

Such military histories whose classified operations were often shrouded in secrecy led Paglen to more extensive investigations in an effort to reveal state cartographic power. Within intentionally uncharted landscapes of the American Southwest, he located “blank spots” on the map, which were invisible features of what he calls the Pentagon’s “dark geography.”³⁹³ In *Limit Telephotography*, a photo series begun in 2005, Paglen used high-powered binoculars and telescopic photographic equipment normally used by astronomers to photograph classified military bases located deep in the deserts of Utah and Nevada.³⁹⁴ Here Paglen employed a combination of optical systems that involved a telescope fitted with a series of mitigating lens between it and the camera to magnify the image circle produced by the telescope. Through this combination of mirrors and lenses he was able to create a long effective focal length of 3,500 mm, for example, which is very slow and therefore picks up the subtlest of atmospheric disturbances.

³⁹¹ Drones began being operated out of Creech in 2002.

³⁹² In another interesting transnational twist, the present-day drone fleet of the RAF also operates out of Creech AFB. “History of Creech Airforce Base,” *Creech Air Force Base*, May 16, 2013, <https://www.creech.af.mil/About-Us/Fact-Sheets/Display/Article/449127/history-of-creech-air-force-base/>

³⁹³ See Trevor Paglen, *Blank Spots on the Map*, 46.

³⁹⁴ This project was not exclusively limited to deserts, but this landscape received significant attention due to its militarized historical legacy.

Through Paglen's distanced depiction of the desert that renders it into hazy striations, often lacking any distinct form which could anchor the images' interpretation, the artist acknowledges the state-designed secrecy of this geography. Meanwhile in his intentional use of ambiguity, he is gesturing towards other historical modes of representation. Notably, he appropriates the pictorial strategy of the Orientalists who used ambiguity as an instrumental tool supporting the range of attitudes held by nineteenth-century European towards deserts, which despite their orientations always viewed deserts as strategically valuable.

In *Limit Telephotography* Paglen sometimes photographed the landscape from the extreme reach of 30-50 miles away; at these distances a paradox emerges in that the more powerful the lenses used, the less clarity that is captured due to atmospheric interruption.³⁹⁵ The fact that the magnification of the lens registers atmospheric disturbances such as heat, or dust means that Paglen's landscape images are not only capturing topographic features but climatic ones as well. Heat, for example, registers in images as visual undulations, while cooler air produces crisper imagery. It could be said of any photograph of landscape that some aspect of climate and atmosphere are captured, but in photographs that aspire towards high resolution, the essential atmospheric feature of air between the camera's lens and its subject tends go unacknowledged. In *Limit Telephotography*, it is the blur that makes the atmosphere salient, and draws the viewers' attention to fundamental aspects of environments that often get taken for granted. The resulting image becomes a representation of climate as the desert heat produces visual waves, while it also becomes a document at once recording and over-reaching the limits of visibility. As the effects of climate change become increasingly evident, these images could be seen as potent documentation

³⁹⁵ Paglen admits to being someone who must put in a lot of time before considering himself an "expert" on a particular subject. Often, he will work for some fifteen years on a single topic.

of another destructive aspect of military enterprises described by the intersection of climate and the military-industrial complex.

In *Open Hanger; Cactus Flats, NV; Distance ~ 18 Miles; 10:04 A.M.* (2007) (Fig.33), part of the *Limit Telephotography* series, a band of loosely defined rectangular shapes occupy the horizon line. Viewers are led to understand these geometries as a group of buildings through the aid of the image's concise titling that defines the photo's subject, where it was taken, from what distance and when. Rather than represented as the stoic and likely Brutalist architectures that they are, here, thanks to the heat rising off the tarmac, the buildings corrupt into a wash of white with stains of blue, pressed between a panel of brown below and blue above. To make sense of this, viewers must pull from landscape images archived in their imagination, to arrange the scene in a vertical order of ground to sky, with the anchoring loaded on the horizon line. Art historian Julia Bryan-Wilson posits that the "watery indecipherability" of the image "is key to its polemic and serves as an examination of the tension between what an image can show us – the purported truth claims of photography and what remains unknown."³⁹⁶ What Paglen consistently insists upon is that obfuscation, ambiguity and abstraction, as modalities and characteristics of the "unknown" all hold their own repertoire of knowledge and information.

Like Ristelhueber, who asserts herself as an artist, and who acknowledges the influence of art historical antecedents, Paglen's work makes constant and varied nods to both contemporary and past artists. His washes of landscape recall the abstract work of Ad Reinhart, the eerie landscape paintings of Gerhard Richter or Hiroshi Sugimoto's pared-down photographs, while a more distant antecedent of this blurred landscape tradition can be located in the work of William Turner. Paglen admits to a direct influence by this latter artist in a print belonging to the *Limit*

³⁹⁶ Julia Bryan-Wilson in Bryan-Wilson et al., *Trevor Paglen*, 53.

Telephotography series, titled, *Reaper in the Sun* (2013) (Fig.34) which is inspired by Turner's *Angel Standing in the Sun* (1775- 1856) (Fig.35). Turner's painting is a yellow-washed depiction of scenes from the Old Testament. In this painting, the narrative is laid out in fractured bursts as the protagonists escape from a golden atmospheric fog, while Paglen's *Reaper in the Sun* is a study in blue through a mist of pale yellow — its narrative if indeed one exists has been obliterated by the sun's radiance. The marker that distinguishes this as a landscape is a fine line of mountains barely discernable at the bottom edge of the photo, while the drone, the ostensible subject of the image, has been lost in the intentional overexposure as Paglen points his camera directly into the sun.

The blur that is constant in Turner's paintings was, in effect, evidence of an increasingly industrialized nineteenth-century world. Turner, then, seems an enduring and apt inspiration in Paglen's work, who is likewise engaging with technological progress, and its associated gains and losses. Turner's oeuvre also attests to an interest in pushing images to the point of rupture, as in, for example, his famous *Rain, Steam, and Speed—The Great Western Railway* (1844), a homage to the train as potent symbol of industrialization that would change both the landscape and societal organization as people could now be transported at unprecedented speeds. Using the drone as a symbol of cutting-edge militarization, Paglen has chosen well in making a similar statement in the twenty-first century. Although drones are not used for the transportation of people, they are capable of changing landscapes and societal organization from above, either through destruction caused by missile attack or through their persistent presence, which affects the behaviour of those on the ground below.

Paglen's acknowledgement of these art-historical borrowings supports the claim that making art and reporting on real things in the world, do not have to be (or perhaps cannot be) an

either/other proposition, as was argued by Ristelheuber, who claimed a position of neutrality when speaking on highly politicized topics. Paglen's use of ambiguity to depict drones and their associated desert landscapes makes an interesting statement regarding the asymmetrical politics of vision in drone warfare. Because of the altitude at which drones can fly making them invisible (but nonetheless audible) along with their "persistent presence," to which citizens living under drone surveillance must uneasily accommodate, individuals do not know when they have been made target. Therefore, the relationship of the ground to sky (person to drone) is one of anxious uncertainty, while the relationship in reverse is described by precision. Predators MQ-9s, for example, are equipped with multiple sensors, including thermographic cameras, and sophisticated imaging systems so powerful operators can read a licence plate from a distance of 3.2km.³⁹⁷ This is to say that the land from above is being read through a variety of modalities, scopes and scales, while the asymmetrical nature of drone warfare ensures that the information produced by such imaging remains exclusive to the owners and operators of the instruments.

Along with sensing equipment, Reapers carry a variety of munitions including Hellfire missiles, laser-guided bombs and joint direct attack munitions (JDAM), which makes targeting a tandem act discovery and elimination. "Taken together," says Derek Gregory, "the capabilities have allowed later modern war to incorporate a new focus on tracking and targeting mobile individuals rather than destroying static objects: it is this power to put that has made drones the weapon of choice for targeted killing in areas that are otherwise difficult to access."³⁹⁸ Indeed, mobility is a salient characteristic of the drone, which describes both their targeting logics and their ability to move at different ranges in airspace and more recently they have been redesigned to as to allow efficacious deployment to target areas. The aspect of mobility is also leveraged in a

³⁹⁷ Gregory, "Dirty Dancing" 27.

³⁹⁸ Ibid.

juridical capacity as in targeting mobile individuals, rather than static objects the target allows the military to redefine and extend geopolitical boundaries, which again has implications in their border control applications. Gregory points out that drones have a significant juridical limitation, which has, by default, defined them as critical tools of border control in that “at present they can only be used in uncontested airspace –put bluntly, they can only be used against people who cannot fight back.”³⁹⁹ It is for this reason, he continues, that “drones have become so important in America’s new wars against nonstate actors in the world’s borderlands.”⁴⁰⁰

Gregory’s extended argument around the shifting notion of borders concerns how targeting technologies and the movement of people reconfigure geographies and borderlands. In a volumetric conception of space, borders become less distinctly defined according to horizontal logic and battlefields become dispersed beyond their traditional, bounded confines.⁴⁰¹ This contributes to what Frédéric Mégret calls the “vanishing battlefield,” a phenomenon he contends has been made possible by a range of conflict-related events over the twentieth century and was certainly exacerbated by the war on terror. This redesigning of the traditional battlefield, from a ground on which distinctly defined factions would spar, into a more nebulous iteration that includes civilian space, has come to affect the writing and application of laws of war. “In effect,” Mégret offers, “the growing prominence of the notion of ‘participation in hostilities’ replaces the predominantly spacio-temporal framework of analysis of the laws of war (who is where) by a

³⁹⁹ As an example of this paradigm, a 2013 Shorenstein Center report prepared by Tara McKelvey found that the majority of drone strikes to be taking place in the Federally Administered Tribal Area of Pakistan, described as roughly the size of Maryland, and one of the poorest places in the world, to which access has been banned to unaccompanied Western journalists by the Pakistani military. Tara McKelvey, “Media Coverage of the Drone Program,” *Joan Shorenstein Center on the Press, Politics and Public Policy*, February 2013.

⁴⁰⁰ Gregory also notes that outside Pakistan, the United States has used drone for targeted killing in Iraq, Libya, Somalia, Syria. Derek Gregory, “Dirty Dancing,” 27

⁴⁰¹ Gregory, “Dirty Dancing,” 44.

functional-personal one (who is doing what).”⁴⁰² In this reordering of space and time, states Chamayou, “the body becomes the battlefield.”⁴⁰³

The absence of a distinct battlefield also has implications for the creation of laws governing war, says Mégret, as it confirms “the breakdown of the frontier between war and crime previously highlighted in the context of the commission of crimes against humanity and the replacement of the battlefield by the camp.”⁴⁰⁴ The changing definitions around war and crime and the dissolution of the traditional battlefield that permits war to invade urban spaces has implications on the use of military vehicles and instruments in civilian areas. Border control is especially affected as these extra-territorial sites assume the status of a battlefield in which migrants are considered invaders and reacted upon by force.

Paglen comments on the so-called vanishing battlefield, and the “everywhereness” of surveillance in *Drone Vision* (2010), a silent five-minute looping video featuring spliced montage of intercepted drone feeds, hacked from an open channel of a commercial communication satellite over the Western hemisphere.⁴⁰⁵ In the generality of its titling and the uncontextualized use of geography, the project deviates from Paglen’s typically specific relationship with place, and hints at the prerogative of the work that speaks to the systematic use and impressive reach of aerial surveillance. In comparison to Ristelhueber’s *Fait*, *Drone Vision* makes a much more convincing universalist argument in speaking to the extensive network of surveillance by acknowledging its mechanical, material, and geopolitical articulations, rather than simply addressing surveillance as a concept, as Ristelhueber did.

⁴⁰² Frédéric Mégret. “War and the Vanishing Battlefield,” *Loyola University Chicago International Law Review* 9, no. 1 (2011-12): 153.

⁴⁰³ Chamayou, *A Theory of the Drone*, 56.

⁴⁰⁴ Mégret, “War and The Vanishing of the Battlefield,” 151.

⁴⁰⁵ Communications satellites provide the nexus of control for many drones remotely ground-controlled by the US, either in domestic or foreign operation; to reduce delay in the system, these video links between aircraft and pilot are often left unencrypted, making them vulnerable to interception.

In *Drone Vision* materiality and mediation (the film is dark, grainy, silent, featuring an aerial perspective) intersect with overlaying information (latitude and longitude, elevation, time, date, scope lines and cross hairs), to produce a register of suspicion that activates a scopic view. In one section of the video, a tractor can be seen moving down what appears to be a dirt road, however, with the clip being but seconds long viewers are given no contextual information regarding the vehicle's point of departure, destination, or purpose (Fig. 36). This lack is maintained throughout the duration of the looping video, depriving viewers of any concrete information as to where the various segments were filmed as one clip moves into the next. Lacking this context, viewers struggle with establishing a point of view, orientation, or narrative through which the imagery could be understood.

In another section of *Drone Vision* (Fig.37), a group of people can be seen walking in a line through what seems to be a desert landscape. With no context or captioning, one could imagine that the figures are migrants attempting to cross a border or a group engaging in some undetermined clandestine activity. The sole narrative information the viewer receives in this vignette, is the fact that there are bodies moving across a landscape, assumedly moving from a point of departure to a destination (both of which are unresolved). Clips of sky, ground, and at one point, a ticking clock on the wall, strung together, reveal the essential role that environment plays in filling the gap about the activities, objects, or people in the world. A line of people walking in a desert landscape, for example, holds different connotations and inspires different assumptions, than the same group walking down a city street (and then again this can be further parsed, to what kind of city street, and what kinds of bodies, and so on). The range of interpretation brought to this scene again depends on attitudes towards the desert that see it variously as dangerous or spiritually

redemptive, perceptions that are likely influenced through one's proximity and familiarity with such sites.

An insistent line of questioning that Paglen presents in this piece is around the official distinctions of landscape. As drones become increasingly used in border control, their technologies and methodologies bring about the distortion of such boundaries and encourages a militarization of civilian spaces. If the battlefield has now been absorbed into civilian spaces, as Mégret and Gregory suggest, it becomes increasingly difficult to distinguish and image. Through the phenomenon largely inspired by the war on terror, borderlands worldwide have become the tangible geographies that serve as proxies for the battlefield, where migrants are viewed as threats on par with insurgents or criminals. In response to such attitudes that see boundary infiltration as threat, border patrols are given the role to police and punish asylum seekers. Drone technology is often one accessory in a greater system of border control, surveillance, and protection, that includes "smart walls," on-foot surveillance, and manned aerial vehicles. The military use of drones has been normalized in the civilian sector, but there has been little debate over this even though it raises important legal, ethical, and moral questions about how military technology is used in civilian society.

Caren Kaplan explains that this collapse of civilian and military sectors has deep historical roots, dating back to the origins of airpower policing in United States in the aftermath of World War I. It was then, she notes, that the first seaplanes and eventually helicopters began patrolling the nation's major seaports, with many of these aerial vehicles having been decommissioned from wartime use, and now operated by demobilized military personnel who were tasked with surveying and policing coastlines, cities, and borders.⁴⁰⁶ Aerial observation also contributed to urban

⁴⁰⁶ Kaplan, "Drone-o-rama," 171.

planning while intertwined with policing and communications as cities sprawled and neighborhoods expanded. This is to say that America was effectively organized from above through military eyes situated in military aerial platforms. Kaplan observes that “this kind of fluid movement between military and civilian populations and machinery already troubles the supposed firm line between these sectors of society.”⁴⁰⁷

It has been made abundantly clear through its range of usage in both military and civil contexts, that drones have powerful influences on boundaries and borders; at times all but erasing the demarcations. As military prerogatives become absorbed into civilian spaces and daily lives, they produce nebulous territories not easily pictorialized by traditional means. This changing landscape calls on “new” imaging technologies, which thereby necessitates a “new” visual language. Artists are among such critics and observers advocating for a wider fluency of a visual language, which involves human comprehension and adaptation of machine seeing. Trevor Paglen is one artist who believes that is vital that humans understand the modes of quantification, targeting and tracking, and prediction that inform machine seeing, which he says renders “conventional visual theory useless to an understanding of machine-seeing and its unseen image-landscapes.”⁴⁰⁸ While *Drone Vision* reveals the impressive reach of surveillance, it is also a lesson on the role of landscape within such practices. *Drone Vision* shows how certain landscapes are produced as clandestine spaces through their rehearsed association (warranted or not) with the activities perceived to take place within them (e.g., drug trafficking or insurgent operations), while at the same time revealing the uneasiness that was ignited by the War on Terror, in which threat and target could potentially be always anywhere and everywhere.

⁴⁰⁷ Kaplan, “Drone-o-rama,” 171.

⁴⁰⁸ Paglen, “Machine Eyes,” in Eds. Bryan-Wilson et al., 140.

As was apparent in Ristelhueber's *Fait*, a range of aerial viewpoints are employed in this piece: from vertical, to oblique, with some of the most compelling scenes being the celestial "aerial horizontal" frames, where the drone's camera, stabilized by a gimbal, pans underneath the aircraft's wings capturing this armature as it records passing clouds and open sky.⁴⁰⁹ The novelty of this point of view, with its uncannily stable traverse from the screen's left to right, requires that the viewer undertake an exerted effort to make sense of this scene, as the camera's anchor point must be forcibly imagined in its strange novelty as a point of orientation. Cumulatively, the transitions without segue between the spliced footage, which privilege different scenes and points of view are destabilizing. The viewer must work to establish their own artificial placement in the viewing that refuses to stand still long enough for a foundation to be formed. This proves to be the most successful aspect of the work in activating the viewers' innate need to spatially situate themselves; *Drone Vision* urges viewers to question surveillance in terms of where and how these images are being produced. With reflexive strategies consistently deployed throughout his oeuvre, Paglen manages to activate a self-consciousness in the viewer that encourages a contemplation of what it means to watch, while being watched at the same time.

⁴⁰⁹ A gimbal is designed to keep your camera at the same angle regardless of the movement of the drone by automatically compensating using calibrated and often remotely controlled electric motors.

Chapter 4: Ground-level Truths: Exploring Oral History and Aerial Perspectives

We have all heard it said that one picture is worth a thousand words. Yet, if this statement is true, why does it have to be a saying? Because a picture is worth a thousand words only under special conditions—which commonly include a context of words in which the picture is set.

—Walter J. Ong²

In 2011 American photographer Fazal Sheikh was one of twelve photographers invited to Israel and the West Bank as part of *This Place*, a project initiated by photographer Frédéric Brenner, whose purpose was to formulate “a visual counter-narrative to the prevailing, often polarized representations of Israel and the West Bank in both national and international news media.”⁴¹⁰ Over a series of extended visits to the region, Sheikh produced *The Erasure Trilogy*, consisting of three bodies of work: *Memory Trace*, *Desert Bloom*, and *Independence/Nakba*.⁴¹¹ In *Memory Trace* Sheikh contemplates the legacy of the Palestinian Nakba of 1948, through a collection of intimate black and white portraits of Palestinians and Arab-Israelis who endured violent dispossession as Palestinian villages were destroyed during the 1948 Arab-Israeli War, and the subsequent Six-Day War of 1967.⁴¹² These portraits placed alongside images featuring architectural ruins, environmental rubble, and landscapes evocative of calm pastoral or eerie aftermath, show the human and material implications of displacement. The final installment of Erasures, *Independence/Nakba*, is a series of 65 diptychs that pair portraits of Israelis and

⁴¹⁰ “This Place” <http://www.this-place.org/>

⁴¹¹ In total, *The Erasure Trilogy* took approximately five years to complete and was published collectively by Steidl in 2015.

⁴¹² Shela Sheikh, “The Erasure Trilogy: Fazal Sheikh interviewed by Shela Sheikh.” *Slought*, New York: Slought Foundation, 2016: 2.

Palestinians according to shared years of birth beginning in 1948 – the year the State of Israel was established, up to 2013, the end of the project.

Desert Bloom, the second project of the trilogy, and a principal case study for this chapter, uses aerial perspectives to explore what is referred to as the “Bedouin Nakba,” a period of forced expulsion of Bedouins and other Palestinians by the Israeli military beginning in 1951, three years after the end of the 1948 war. During this time roughly ninety thousand Bedouins, some 90 percent of their population in the Naqab, were forced into Jordan and Egypt, while the rest were internally displaced and concentrated in a limited area in the more arid parts of the desert.⁴¹³ *Desert Bloom*, is a series of 48 sepia-toned prints of the Negev that explore the transformation of the desert that has been brought about by Ben Gurion’s Zionist invocation to “make the desert bloom.”⁴¹⁴ These aerial photographs capture the collapse of conflict and climate change as the cumulative effects of decades of “urbanization, militarization, mining, construction, contamination, and destruction, as well as the continued displacement of the Bedouins.”⁴¹⁵

In certain photos, patches of flattened earth imprinted with patterned lines show where bulldozers have recently destroyed Bedouin homes, while others feature geometric shapes of bunkers holding nuclear waste, and still others show trees where once were none, as evidence of Israel’s afforestation project. These photographs are not exhibited on their own, however. Paired with interpretative text that has been gathered through consultation with Bedouin community members, pilots, geographers and scholars, viewers are given the necessary ground-level information to understand the shapes and patterns as seen from the sky.⁴¹⁶ Rather than promoting

⁴¹³ EWeizman, *Forensic Architecture*, 217.

⁴¹⁴ Shela Sheikh, “The Erasure Trilogy: An Interview with Fazal Sheikh,” 2.

⁴¹⁵ Ibid.

⁴¹⁶ Fazal Sheikh performed site visits in collaboration with Haia Noach, Nūri al-‘Uqbi, Sayāh al-Tūri, Eyal Weizman, Oren Yiftachel, and Eidan Zilbertstein. Additional information has been drawn from a variety of sources, in particular from the Arab Association for Human Rights, Adalah, Bimkom—Planners for Planning Rights, Negev

an aerial abstraction, *Desert Bloom* speaks to the potential of revelation as both temporal and spatial information are made visible from above. Sheikh argues that abstraction is not inherent of aerial photographs but is partly activated by viewers' lack of knowledge of how to read the signifiers in such images—a skill he believes can be learned.

In an interview with the artist in *Slough Magazine*, Shela Sheikh writes that the *Erasure Trilogy*, through its photographs, and their accompanying captions and testimonials is meant to honour “the ruination of villages, settlements, families, communities, and modes of inhabiting the land, but also bears witness to the subsequent camouflaging of these historical acts of erasure, and the persisting mechanisms and consequences of this in the present.”⁴¹⁷ Shela Sheikh's summary of the *Erasure Trilogy* effectively captures the project's archival capacity in its documentation of ruin, but I also want to suggest that the photographs not only register the evidence of destruction but also the traces and formations of resistance. For example, each time that Al'Araqib, one of the villages photographed by Sheikh, was destroyed, it was again rebuilt. By 2012, it had been reconstructed 103 times.⁴¹⁸

This is to say that captured in the layers of ground beneath the village in its ruination and rebuilding, is both the energy and trace of the microphysics of state power, along with the insistence of the right to return on the part of the Bedouins. More specifically, it is the collaboration between oral testimony and photography that Sheikh encourages that activates the histories held in the lines and stains that mark the land. As oral historians Alexander Freund and Alistair Thompson write, “photographs cannot tell stories. They can only provide evidence of stories, and evidence is mute; it demands investigation and interpretation. Looked at in this way, as evidence

Coexistence Forum (Dukium), Palestine Remembered, and Zochrot. Shela Sheikh, “The Erasure Trilogy: An Interview with Fazal Sheikh,” 2.

⁴¹⁷ Shela Sheikh, “The Erasure Trilogy,” 2.

⁴¹⁸ Weizman, *Forensic Architecture*, 217.

of something beyond itself, a photograph can best be understood not as an answer or an end to inquiry, but as an invitation to look more closely, and to ask questions.”⁴¹⁹ Aerial photographs are documents that are effective in prompting the interrogatory, in that they present views of landscapes that are potentially novel or uncommon—they are not easily digestible images and therefore invite a closer look.

According to Fazal Sheikh, the collection of aerial photographs that comprise *Desert Bloom*, provides a link between the first and third bodies of work in the *Erasures* trilogy,⁴²⁰ and asks pressing questions about both the history and territory of the Negev. The privileging of ground-level stories makes this series a rich point of reflection on the relationship between aerial photography and oral history. Sheikh reports that in the making of the desert aerial photographs it occurred to him that such images could act as prompts for people to reassess what they expect from their respective landscapes. This statement resonated with me, as so much of aerial imagery is put to exploitative or extractive ends. Sheikh’s deployment of the aerial images, and his awareness of the hope invested in them, allows people to reconsider their relationships with the world, providing an alternative approach to looking at the landscapes from above. Rejecting the traditional omniscience of the aerial view, he encourages viewers to use this point of view to be receptive to messages from below.

This chapter will consider the potent and relatively unexplored relationship between aerial perspectives and oral history, using two artworks as case studies: the aerial photographic series *Desert Bloom* (2011) by Fazal Sheikh and the 26-minute film *Come to Me, Paradise* (2016) by Stephanie Comilang. These case studies allow me to consider how aerial perspectives can be put

⁴¹⁹ Alexander Freund and Alistair Thompson. Eds. *Oral History and Photography* (New York: Palgrave MacMillan, 2011), 1.

⁴²⁰ Shela Sheikh, “The Erasure Trilogy,” 5.

into conversation with ground-level testimony, to form expressions of displacement, home, and resistance, thereby creating a more profound understanding of place. In the case of Sheikh, these ideas are explored in the context of the contested landscape of the Negev, while Comilang's film is a hybrid documentary/fiction work that also combines aerial views and oral testimony, which speaks to the lived experience of migrant Filipina domestic workers in Hong Kong. While not forcibly expelled by a military regime as is the case with the Bedouins by the state of Israel, significant populations of Filipinas are forced through economic hardship to leave families and "home" behind, often for extended or indefinite periods of time.

Sheikh and Comilang's appropriations of aerial views differ from the conventional operation of aerial images as "master-view" documents in that they recognize that if these perspectives have any hope of assembling "truth" (meaning: a faithful reconstruction of "what happened"), they must be put into conversation with ground-level knowledge which originates from multiple sources. The principle that is foundational to this power-shifting dynamic is achieved through building narratives based on many voices versus the singular authorial narrator that so often gives a god-like voice to the "god's-eye view." Rather than producing a sense of place from above in a way that proclaims the superiority of that vantage point, these artists introduce the contribution of a range of ground-level actors—actual inhabitants of the places that are featured within their respective work. This arrangement allows for a reflexive relationship between above and below, challenging the conventional and misleading classification of aerial images as empirical documents created through a disembodied techno-omniscience.

Refusing such distanced productions, both Sheikh's and Comilang's artworks offer embodied expressions of perspectives that develop a complex sense of place; both artists' narratives are informed by the lived experience of those who inhabit the landscapes and

geographies appearing in their works. Although the narrators of the stories *Desert Bloom* and *Come to Me, Paradise* are not pictured, they contribute to a sense of embodiment as the stories are filmed or given meaning through their eyes. In *Come to Me, Paradise*, the lives of the migrant domestic workers are viewed through Paradise (the drone), while in *Desert Bloom*, oral history helps viewers understand the images and landscapes with which they are engaging. Bedouin elders, aerial interpreters, and investigative analysts activate the landscape both spatially and temporally, just as the drone known as “Paradise” does in *Come to Me, Paradise*, as such, they are conduits to the past. In both cases these strategies produce proximal, embodied discourses around the relationships between people and landscapes. These are not singular “official” narratives offered from a distance that tend to homogenize space and experience, and use encapsulating narrative strategies to summarize events in terms of their goals, outcomes, and costs, but rather they are expressions of individual experiences, made of moments that sometimes register on the scale of the incremental. In Comilang’s film these small stories might be in the form of a woman singing into her hairbrush in front of a bathroom mirror, while in Sheikh’s project, they may be in the memory of a Negev inhabitant, describing a line that marked a path walked to gather water at a well.

As was argued in the analysis of Colin Powell’s presentation of satellite photographs of Taji Iraq at the UN in 2003, aerial images are often activated by the state into declarative or predictive documents. What Sheikh and Comilang present are, instead, interrogative images which necessitate closer looking. When an answer is supplied, it becomes a prompt for further questioning. For example, learning that the marks and patterns on the desert floor indicate a series of homes destroyed in yet another razing of the village of Al’ Alaqīb, may encourage one to contemplate the importance of community in manifesting the will to rebuild and the efforts required to reconstruct. Or, when it is understood that the domestic workers in Hong Kong meet

in the city's Central district each Sunday, one might begin to wonder how the other six days of the week are spent. Instead of using aerial imagery to produce a pre-formed narrative of place (as for example, in Ristelhueber's *Fait*), Sheikh and Comilang instead choose to be open to ground-level information, allowing it to lead the story. They ask not what can be made of this space, but are open to receiving signals offered to them, while their artwork encourages their viewers to ask the same. And, rather than seeing ground and sky in opposition, these artists regard views from above and below through a relational lens; they are in dialogue, rather than in competition.

The analyses in this chapter will draw from an interdisciplinary range of scholars including Donna Haraway on situated knowledges, Eyal Weizman and Matthew Fuller on architecture/visual investigations, Doreen Massey's insights into geography, and Steven High's writings on oral history. All of these approaches are in different ways invested in notions of ground truths. To use Donna Haraway's terminology, all these scholars insist on the importance of "embodied perspectives" and "situated knowledges." This means that aerial views must be in conversation with the ground and must be open to receiving ground-level information, rather than imposing meaning from above. In this sense, worldviews are not solely macro-conceptions constructed through totalizing disembodied views of the world from above, but rather, are formed of multiple voices, perspectives, and experiences. Entering into conversation with the view from above, these terrestrial perspectives help to form more complex pictures of the world.

"Positioning," says Haraway, "is the key practice grounding knowledge organized around the imagery of vision, as so much Western scientific and philosophic discourse is organized. Positioning implies responsibility for our enabling practices"⁴²¹ Haraway writes:

Situated knowledges are about communities, not about isolated individuals. The only way to find a larger vision is to be somewhere in particular. The science question in feminism

⁴²¹ Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies*, Vol. 14, No. 3 (Autumn, 1988), 590.

is about objectivity as positioned rationality. Its images are not the products of escapes and transcendence of limits (the view from above) but the joining of partial views and halting voices into a collective subject position that promises a vision of the means of ongoing finite embodiment, of living within limits and contradictions—of views from somewhere.⁴²²

Haraway's interruption of objectivity is achieved through an honouring of community and specificity of place over omniscience and universalism. In both cases, the individuals provide the voice and the agency to drive narratives. As members of marginalized groups, whose stories, if they are heard at all are often described as uniform experience in broad strokes—aerial images are adept at such summaries. Communities are not homogenous entities but consist of individuals with respective experiences and subjective bodies in relation to each other and to place. Situated knowledges join these partial views, these bodies and places—this logic finds both pictorialization and voice in the work of Sheikh and Comilang.

Adding to Haraway's argument on positionality, Doreen Massey conceives of place not as an empty space in which things occur, but rather as an "envelope of space-time." In her celebrated 1995 article, "Places and Their Pasts," Massey writes, "the identity of places is very much bound up with the histories which are told of them; how these histories are told, and what history turns out to be dominant."⁴²³ The statement is particularly applicable to the Negev, a region formed by the competing historical accounts produced by Israel and Palestine, with the former asserting their present-day dominance through military force, while erasure is used to impose a singular historical authority. However, as Fuller and Weizman remind, "erasure is always also a form of registration."⁴²⁴ One mode of registration that erases is the negation of Bedouin memory by the State of Israel. By refusing to recognize oral history as a credible mode of testimony in courts of

⁴²² Haraway, "Situated Knowledges," 590.

⁴²³ Doreen Massey, "Places and Their Pasts," *History Workshop Journal*, No. 39 (Spring, 1995), 186.

⁴²⁴ Fuller and Weizman, *Investigative Aesthetics*, 84.

law, Israel denies the main archival mode of Bedouin histories and their most robust register of evidence.⁴²⁵ The erasure project advanced by Israel assumes multiple intersecting manifestations, as Bedouin memory is denied, their villages repeatedly destroyed, and their land claimed through an Israeli afforestation project, disguised as an environmental initiative. The concerted effort on the part of Israel to deny and erase Palestinian memory, registers the asymmetrical power enabling the project.

Doreen Massey argues that it is the exercise of some form of power relations that maintains the characterisation of place: “The boundaries of nation states are temporary, shifting phenomena which enclose, not simply ‘spaces’, but relatively ephemeral envelopes of space-time. The boundaries, and the naming of the space-time within them, are the reflections of power, and their existence has effects. Within them there is an active attempt to ‘make places.’”⁴²⁶ Massey’s conception of place as something unfixed and in transformation joins with Weizman’s contention that frontier lands are not static and thereby defy strict classifications, a statement that he has applied specifically to the Negev.⁴²⁷ Weizman, along with Sheikh present opportunities to reconsider the power systems involved in the act of categorization, as in who is defining the parameters and assigning status. Landscape is never static, while contested borderlands are notoriously energetic, volatile, and precarious, as is the case in the Negev. Likewise, Barbara Bender offers that “landscapes are always in “process of being shaped and reshaped. Being of the moment and in process, they are always temporal. They are not a record, but a recording and this recording is much more than a reflection of human agency and action; it is *creative* of them.”⁴²⁸

⁴²⁶ Massey, “Places and Their Pasts,” 190.

⁴²⁷ Eyal Weizman, “Ground Truth: Colonization as Climate Change,” Sonic Acts Festival-The Noise of Being, De Brakke Gronde, Amsterdam, Feb. 26, 2017. <https://www.youtube.com/watch?v=omivukSotb4>

⁴²⁸ Barbara Bender, “Time and Landscape,” *Current Anthropology* (Vol.43, Supplement, August-October,2002),103.

Desert Bloom does important work pictorializing the processes of development and destruction, and in doing so Sheikh makes visible the “place-making” power dynamics as described by both Massey and Bender.

Particularly remarkable is how the photographs of *Desert Bloom* do not operate as static documents (although of course they are, to a certain extent), but assert or suggest that they are but moments temporarily captured within an impressive historical continuum. Take for example, an aerial photograph, (Fig 38) taken Nov. 13, 2011, which could perhaps best be described as a rough pattern of rectangular imprints, out of which the occasional shape rises, its entirety contained by an irregular border where the desert becomes unfettered by structures. The accompanying text offering concrete facts rather than qualitative description activates the photograph into a historical document and situates it both as evidence and art. In both instances, the photographs in *Desert Bloom* consistently show the relationship between the spatial and the temporal and argue for the indivisibility of these two factors.

The captions do important work in emphasizing the instability of place, which translates a sense of ephemerality to the image. The respective captions for each of the 48 photographs that make up the series, hold vestiges of Haraway’s “situated knowledges,” while honouring Massey’s conception of place as an envelope of time and space. For this reason, the photographs in *Desert Bloom* do not read as iconic images of the desert but are understood as unique snapshots that capture a specific site of instability, which if pictured in the future would look different. This understanding perhaps reflects a “sequential” relationship that has been developed in viewers of aerial photographs that are frequently used in a before-and-after modalities. Both Massey and Weizman’s understanding of place as spaces in flux supplies an apt lens through which to consider

the human and architectural entanglements with landscapes in Sheikh and Comilang's work alike, despite the different places they invoke.

Oral History and Photography

Before advancing to questions more specifically focused on aerial photography and oral history, it is useful to consider the relationship of photography and oral history in a broader sense. This exercise will help to identify potential applications of aerial photography in this context, by considering how these images might be similarly used as mnemonic devices in oral history interviews, and to imagine how they might come to play roles not possible for images taken at ground level (which would be those most frequently used as prompts in oral history interviews). This discussion will address the main contemporary uses of photographs in oral history projects, as discussed by Freund, Thomson, Mannik, Trower, and High; within this broader framework, I will consider topics of memory, narrative voice, and mobility.

Oral history⁴²⁹ and photography form an important point of convergence between epistemes of evidence, memory and storytelling. Both oral history and photography “are used as forms of evidence; both require ‘memory work’; and both are forms of storytelling.”⁴³⁰ Within this nexus, photographs have the potential to play more versatile roles beyond that of mnemonic devices, serving as well as documents of social history.⁴³¹ These two modalities are the ones used principally by oral historians using photographs as they search for historical facts. To this end, oral historians read photographs as they would other sources as documents of social history, as

⁴²⁹ Shelley Trower defines oral history as “recollections from within a speaker’s lifetime and usually makes use of technology to record and replay the sounds of the voice.” Shelley Trower, *Place Writing and Voice in Oral History*, (New York: Palgrave MacMillan, 2011), 1.

⁴³⁰ Freund and Thomson, *Oral History and Photography*, 3.

⁴³¹ *Ibid.*

“containers of facts about past events and experiences”;⁴³² while photographs are also used by oral historians to “stimulate the narrator to remember” or to “trigger recall.”⁴³³

Following their experience in interviews using photographs, Freund and Thomson noticed that these so-called “containers of facts,” seemed to encourage a curious tendency among narrators of images. The interviewees did not talk about what the historians themselves saw in the photographs, but “instead seemed to go off on “tangents.”⁴³⁴ This dissonance in readings can be largely attributed to the oral historian’s lack of immediate experience with the events or objects depicted in the photographs, but when read against Barthes’ claim that what individuals identify in photographs attests to past events, may speak too of how historians’ pasts may also contribute to what is made salient for them in images.⁴³⁵ Meanwhile, in terms of mnemonic potential, Lynda Mannik reports that looking at photographs as part of the interview process “deepened, brightened, or coloured the memories elicited. They induced emotional responses and added credibility to storytelling due to their material proof of experience.”⁴³⁶ Mirroring this observation, Jeffrey Samuels describes how photographs enrich oral narratives, eliciting “very concrete descriptions,” grounded in “lived and effective experience.”⁴³⁷ While John Collier and Malcolm Collier discovered that “photos are charged with unexpected emotional material that triggers intense feelings.”⁴³⁸

⁴³² Ibid.

⁴³³ Ibid. Here Freund and Thomson cite Valerie Raleigh Yow and Donald A. Ritchie in the coining of these terms. Freund and Thomson, *Oral History and Photography*, 3.

⁴³⁴ Ibid., 4.

⁴³⁵ Barthes, *Camera Lucida: Reflections on Photography*, Trans. Richard Howard (New York: Hill and Wang, 1982), 85.

⁴³⁶ Barthes, *Camera Lucida*, 17.

⁴³⁷ Jeffery Samuels, “Breaking the Ethnographer’s Frame: Reflections on the Use of Photo Elicitation in Understanding Sri Lankan Monastic Culture,” *The American Behavioral Scientist*, 47, 12 (August 2004), 1533.

⁴³⁸ John Collier and Malcolm Collier, *Visual Anthropology: Photography as a Research Method* (Albuquerque: University of New Mexico, 1986), 99.

Because of the information and emotion they hold, photographs are important to oral historians both for the subjects they represent as registers of the past, but also in their ability to produce or provoke memories. I suggest that as documents of social history, their materiality is also of potential interest to oral historians. Photographic paper, chemicals and processes all hold signatures of the temporal moment external to those within the image's frame, as was discussed by Weizman earlier in the thesis. Materials, their quality and their rate of deterioration can provide important information regarding respective circumstances. As well, following the observations of Weizman, material knowledge of these documents could make the historians more attentive to the limits of representation of various media, while providing traces to more complex geographies that contribute to the image's manifestation. Details such as where a camera was made or where certain products such as printing paper were produced or may have been exclusively available can help contribute significant contextual points towards a greater narrative. In the case of reprints of old photos, this too contributes to the narrative and speaks to the distance the photo has traveled through time and which technological mediations it has encountered. Within the stages of production of analogue images, from the taking of the photograph, to the film's development, is a rich history that is part of the image which rarely gets discussed. The state in which the image is found, says much about the environmental conditions of its storage, which may also offer geographical indices. Finally, materiality cannot be underestimated in its power to elicit memory through tactile engagements between bodies and things.

That photographs should be used in processes of memory collection seems rather intuitive as relationships between images and memory are longstanding, dating back to the art of memory invented by the ancient Greeks and subsequently migrated to the Romans, "whence, writes Frances

A. Yates, “it descended in the European tradition.”⁴³⁹ In this art, explains Yates, memorization is articulated through a “technique of impressing ‘places’ and ‘images,’” on memory.”⁴⁴⁰ The most common type of mnemonic place system was architectural, wherein an orator wishing to remember the contents of a long speech would imagine a building and place images they wished to remember in various locations within, which they would later return to recollect. Says Yates, referring to Quintilian’s description of the mobile methodology that underpinned this technique: “We have to think of the ancient orator as moving in imagination through this memory building whilst he is making his speech, drawing from the memorized places, the images he has placed on them.”⁴⁴¹

In the time before printing, a trained memory was essential, and images played an important role in its fortification. Throughout the ages, relationships between memory and the image changed in coincidence with emerging technologies serving as memory supports, and altered the manner in which images are made. Scholarship in the twentieth- and twenty-first century on the topic has been robust and interdisciplinary, with the relationship of photographic images and memory alone having been taken up by scholars such as W.J.T. Mitchell, Roland Barthes, Susan Sontag Martin Jay, Richard Cándida Smith, and Pierre Nora. Despite this longstanding interest, it was not until the end of the first decade of the twenty-first century, that the relationship between oral history and photography began to receive critical attention. Photographs had been used by oral historians since the 1960s, and yet, report Freund and Thomson, the subject of photography in major English language guides and handbooks on oral history in the early 2000s, received cursory if any attention.⁴⁴² Scholarship that specifically addresses aerial photography and oral history is difficult

⁴³⁹ Frances A. Yates, *The Art of Memory*, (London: Pimlico, 1996), II. It is possible to imagine there were antecedent memory systems that did not get recognized through a European register.

⁴⁴⁰ Ibid.

⁴⁴¹ Ibid.

⁴⁴² Freund and Thomson, *Oral History and Photography*, 2.

to find, but it is worth asking how might people remember through images taken from aerial vantage points not directly experienced by the interviewee.⁴⁴³ And how might this perspectival transference, work to elicit memory? If, for example, such photographs are shown to civilians who have suffered drone strikes, how might seeing the landscape, that is *their* landscape, from above, that is from the perspective of the aggressor, encourage recall of particular events that might contribute to the formation of counter-narratives?

Mobility and Memory in Oral History

Mobility has been recognized as a useful modality by oral historians, which is being put to increasingly creative use. Steven High reports that a new “mobilities paradigm” is growing in popularity among scholars in the humanities and social sciences, which is “encouraging scholars to engage with the materiality of the built and natural environments.”⁴⁴⁴ The mobility enabled by mobile technologies and immersive technologies (such as GPS), can, through a necessarily critical approach, offer oral historians “an opportunity to rethink oral history practice.”⁴⁴⁵ These technologies become useful on both the recording end of oral histories and the receptive end, in both instances permitting an emplacement within an environment and a modality for moving through, guided by story:

The walking interview, for example, has emerged as a core practice of geographers and artists interested in place identity and urban change. The environment thus acts as a visual and auditory prompt to the stories being told whilst bumbling (aimless walking as a strategy to reconnect with the surrounding environment), soundwalking (the mobile exploration of ambient sound), or during the go-along (an interview done while walking, cycling, or diving through a person’s neighborhood or home place).⁴⁴⁶

⁴⁴³ Steven High confirmed that although there is increasingly robust literature on the relationship between oral history and photography, the relationship between aerial photography and oral history has yet to be extensively explored. Steven High email to author, July 21, 2021.

⁴⁴⁴ Steven High, “Mapping Memories of Displacement,” Eds. Alexander Freund and Alistair Thomson, *Oral History and Photography*, (New York: Palgrave MacMillan, 2011),218

⁴⁴⁵ Ibid.

⁴⁴⁶ Ibid.

Here mobility is not limited to the storytellers, says High, as future listeners can enjoy these stories while on the move by downloading audio files onto smart phones, while in some instances GPS is being used to create “immersive storytelling space or mediascape. [...] All of these strategies serve to elicit spatial or place stories, a useful complement to life-history interviewing.”⁴⁴⁷ While Rebecca Solnit adds an active image of the navigation of place, writing that, “place is a story, and stories are geography, and empathy is first of all an act of imagination, a storyteller’s art, and then a way of traveling from here to there.”⁴⁴⁸

This mobility of “traveling from here to there” is reminiscent of the mediative mobility Martha Langford identifies in the performance of album viewing, as narrators and viewers travel in memory to previously undetermined destinations. It is an example of mobility as mediation that Peter Adey suggests may potentially be “the most powerful property of mobility as people, non-humans, and things regularly travel with and transport one another to different places.”⁴⁴⁹ Individual photographs possess this ability to transport their narrators in both time and space, while albums, collections of photographs, or photographic exhibitions form another cartography of movement that amplifies this travelling. It is important to recognize as well that not all mobility across landscape or territory is voluntary or productive and that displacement, eviction and migrancy in connection with war, political unrest, economic instability, and increasingly with climate change, constitute a considerable and at times not indistinct circulatory flow of global movement. Both Sheikh and Comilang are aware of their range of mobilities as artists and global citizens with agency in comparison to the restricted movement of the subjects of their respective works.

⁴⁴⁷ High, “Mapping Memories of Displacement,” 219.

⁴⁴⁸ Rebecca Solnit, *The Faraway Nearby*, (New York: Viking, 2013), 3.

⁴⁴⁹ Peter Adey, *Mobility*, (New York: Routledge, 2010), 16.

High argues that, “Discursively... ‘displacement’ has become so commonplace that it has been shorn of its emotional content and cultural meaning.”⁴⁵⁰ He remarks that part of the challenge in oral history projects such as the creation of memoryscapes is that “they suppose a stable and unitary local community,” which ultimately results in the production of unifying stories that do not include the potential of internal division.⁴⁵¹ Working through this problematic, High asks, “How do we represent the complexity of social relations and the fluidity and multiplicity of communities themselves? In answering these questions, we must keep in mind how these interpretative acts came into being: from whom, by whom, for whom.”⁴⁵²

High argues that there is an essential relationship between place and memory and that “without a sense of memory, place would be impossible.”⁴⁵³ While Marlene Creates contributes a geographical aspect to memory High’s contention, observing that “the recollection of personal history grounded in a particular landscape.”⁴⁵⁴ One might argue as well that memory is very much formed through a sense of place, and in certain cases, such as in the Negev, trauma affects both memory and landscape. Hastings Donnan and Kirk Simpson observe how “survivors of traumatic experiences often feel that no one wants to listen, so they either retreat into silence or struggle to find ways to tell stories so that people will believe them. Often the difficulty is not in remembering, but in communicating traumatic experiences as a reality.”⁴⁵⁵ There is also a temporal disjunct between direct experience and future interpretation that trouble images of traumatic events, so that

⁴⁵⁰ High, “Mapping Memories of Displacement,” 558.

⁴⁵¹ Ibid.

⁴⁵² Ibid.

⁴⁵³ Ibid.

⁴⁵⁴ Marlene Creates, quoted in Joan M. Schwartz’s preface to the book, “Constituting Place of Presence: Landscape, Identity and the Geographical Imagination, in Marlene Creates, *Places of Presence: Newfoundland Kin and Ancestral Land, Newfoundland*, 1989-91 (St. John’s: Killick Press, 1977), 1-18.

⁴⁵⁵ Lynda Mannik, “Remembering, Forgetting, and Feeling with Photographs,” *Oral History and Photography*. Eds. Alexander Freund and Alistair Thomson. New York: Palgrave MacMillan, 2011: 86.

aural gaps need also be considered alongside the visual gaps in photographs. Sharing and discussing photographs among multiple interviewees can give a more comprehensive idea of “what happened” at a particular moment, which according to H. Porter Abbot is the prime question elicited by an image, in activating a viewer’s narrative consciousness”: “We want to know not just what is there, but also what happened.”⁴⁵⁶

Aerial Photography and Oral History

In alignment with Freund and Thomson, who insist on the necessity of a conversation around images and oral history in a world made increasingly visual, I argue that in world increasingly mapped and imaged from above, aerial images must be included in the discourse.

The implementation of aerial photography in oral history could potentially introduce opportunities to remembering attached to the problematization of landscape through perspectives that can abstract and obscure, and which include a register of scale that obliterates detail. Rather than seeing such optical challenges as disadvantageous to a more comprehensive understanding of aerial images and the landscapes pictured within them, they could be seen as interrogative entry points. Features that have either been made invisible or which rest on the threshold of detectability due to material limitations or interruptions, call upon more attentive looking, whose efforts might contribute to more profound modalities of memory elicitation otherwise not possible by more spontaneous forms of photo elicitation.

It is also worth asking how aerial photographs can recuperate an intersection of geography and oral history, acting as potent templates of memory maps, which are according to Joan

⁴⁵⁶ H. Porter Abbot, *The Cambridge Introduction to Narrative*, 2nd ed. (Cambridge: Cambridge University Press, 2008), 6-10.

Schwartz, “not so much about space on the ground as place in the mind.”⁴⁵⁷ From here, one might ask how the traveling that is enabled in the expanse and vantage point of the aerial photograph might facilitate similar “flights” through the patchwork territories of memory. Like landscape features as seen from an aerial distance, memory also necessitates intense contemplation to make images of the past legible. Their demand for proximal relationships with the surfaces of images to make out distant shapes, invest aerial photographs with great potential in the elicitation of memory.

Memory, since the time of ancient philosophers has been considered along structural terms, in possession of volume, surfaces, and limits. Contemporary geographers likewise consider space along such volumetric terms.⁴⁵⁸ Doreen Massey, for example, envisions space not as an empty container where the ‘stuff’ of history happens,” but an “envelope of time and space.”⁴⁵⁹ Spatiality is a vital concept in cartographic practices, and while aerial images are not maps per se, they can similarly participate in exercises of cultural mapping. Geographer Sébastien Caquard suggests there is “a growing interest in the relationship between maps and narratives.”⁴⁶⁰ This interest, I suggest could also be extended to aerial photographs. According to Caquard, the relationship between maps and narrative are multiple—they are, for example a recurrent fictional theme, while are also useful as an analytic tool to investigate the spatial dimensions of literary or cinematic stories.⁴⁶¹ He writes, “These numerous relationships between maps and narratives indicate the importance of spatiality in the arts and the social sciences (Cosgrove, 1999; Sui, 2010; War and Arias, 2009), as well as the significance of the visualization of spatial information (Dodge,

⁴⁵⁷ Joan Schwartz, “Constituting Place of Presence: Landscape, Identity, and the Geographical Imagination,” preface to Marlene Creates, *Places of Presence: Newfoundland Kin and Ancestral Land, Newfoundland 1989-91* (St. John’s: Killick Press, 1997), 1-18.

⁴⁵⁸ This volumetric conception has also been adapted by the military, as the concept of the “kill box” demonstrates.

⁴⁵⁹ Massey, “Places and Their Pasts,” 188.

⁴⁶⁰ Sébastien Caquard, “Cartography I: Mapping Narrative Cartography,” *Progress in Human Geography* (37 (1), 2011), 136.

⁴⁶¹ *Ibid.*

2011).”⁴⁶² Aerial images likewise assert the significance of spatiality and can be used to visualize histories and analyze relationships between places and things. Just as colonial maps imposed colonial meaning on the territories they conquered, aerial images can (and often do) have such meanings imposed upon them, as has been argued throughout the thesis. And if as James C. Curtis argues, photos cannot speak: “It is as if the image provides a fact, but the word provide the meaning,”⁴⁶³ it is worth thinking then who is providing the dominant meaning to aerial images, and how such singular narratives might be interrupted.

Traditionally in aerial photographs meaning is provided by an omniscient voice which is never specifically named but operates as generalized representative of “expertise” or authority, which then provides a homogenized or annotated resume of the image. In implementing aerial photographs in oral history interviews, the image’s meaning is made through multiple voices and perspectives, with specific knowledge of place. As examples of social documents, aerial photographs offer unique opportunities for nuanced collective readings, as disparate sites in the photograph will hold personal meaning among interviewees, while other features, such as community architectures (e.g., mosques, churches, factories) may serve as points of social memory convergence. Witnessing the landscapes and formulating relationships between one area to another is a practice likely to encourage “concrete description” grounded in “lived and effective experience” as observed by Samuels in the general use of photographs in oral history interviews.⁴⁶⁴

As Jeremy Brotton has noted when it comes to looking at maps, a tendency of “collective egocentricity” emerges, wherein individuals prioritize their own position on the map at any scale,

⁴⁶² According to Caquard, such practices are variously described as “story maps,” “fictional cartography,” “narrative atlas,” and “geospatial storytelling”⁴⁶² (terms I argue could be extended to aerial photographs). Ibid. 36-37.

⁴⁶³ James C. Curtis, “Documentary Photographs as Texts,” *American Quarterly* 40, 2 (June 1988): 246-252, 246.

⁴⁶⁴ Samuels, “Breaking the Ethnographer’s Frame,” 1528-1549.

as such a sense of “home” (or its proxy) often plays the role of memory’s starting point.⁴⁶⁵ The relationship between memory and image here becomes potently reciprocal, as the aerial photograph elicits memory, it also absorbs the local knowledge shared by the individual narrators, thus the image’s meaning is made from ground-level up. Furthermore, beginning life stories from “home” contributes valuable small-scale information that gives to the greater fabric of the narrative of place as social space. The view from above is adept at broad sweeps of narrative, but due to distance and issues of scale, intimate quotidian details, which is what constitutes the majority of life stories. Even more problematic (and lethal) are the ground-level gestures misread from above as threat, as in the assessment of “patterns of life” by drone operators, which is shown to be consistently flawed.⁴⁶⁶

Inviting multiple narrative voices to give meaning to aerial images through oral history can also disrupt the scopic regime whose paradigm has historically functioned via an all-seeing disembodied eye that takes in the ground in the spirit of domination. Through the introduction of many narrators and many eyes, the gaze “from above” as interviewees interact with the aerial photographs, becomes dispersed and multi-perspectival and inquisitive rather than absolute and authoritative.

Fazal Sheikh: *Desert Bloom*

In *Desert Bloom*, the histories that are told include Bedouin community members, along with other local experts, and are very much situated at ground level. Privileging the significance

⁴⁶⁵ Jeremy Brotton, *A History of the World in Twelve Maps*, (London: Penguin 2012), 9.

⁴⁶⁶ An argument is made that while drone strikes might be precise, the intelligence informing these operations are often not. A recent example of the high stakes of aerial misreading of ground-level behaviour is the U.S.-led drone strike which erroneously targeted an aid worker, Zemari Ahmadi in Kabul on August 29, 2021. Suspecting that Ahmadi was contributing to a bomb plot targeting American military personnel at the Kabul airport, a Reaper drone was ordered to strike his home. The drone strike killed 10 people, including Ahmadi and seven children. Matthieu Aikins and Alissa J. Rubin, “First Tied to ISIS, Then to U.S.: Family in Drone Strike is Tarnished Twice,” *New York Times*, September 18, 2021. <https://www.nytimes.com/2021/09/18/world/asia/afghanistan-drone-strike-reaction.html>

of the histories shared and the voices who told them, Sheikh permitted the photographs to play a supporting role to the testimony, rather than the other way around. This is a rare reversal of relationship between image and text, particularly within an exhibition context, where didactic literature is used in the traditional sense of Barthes' "anchorage," guiding audiences according to signifiers deemed salient from the perspective of an art institution. Sheikh's subversion of this order allowed the narrative to be distributed across image and text, which then possessed the potential to elicit other memories from exhibition visitors. Such spontaneously recalled memories might either collaborate with or contest the information held in the text. In this important sense Sheikh is importantly privileging ground-truth over the aerial aesthetic as the defining operation of the series.

Through the level of concrete detail included in the text, which is too substantial to be considered captioning and because of the reciprocal relationship of the text and image, Sheikh is drawing selectively on Barthes' "anchorage." In this case, the text does help to "direct the reader through signified of the image," but it does not work towards ideological ends by strategically directing attention towards and away from certain features.⁴⁶⁷ Sheikh's privileging of situated knowledge over ideological aims, distinguishes *Desert Bloom* from first case study to which Barthes theories were applied, that of Collin Powell's presentation of the satellite images at the U.N. Between these two cases, the operations of text and image are remarkably distinct, yet the physical landscapes are quite similar and the atmosphere equally charged.

Aerial views which are closely associated with immersive technologies such as GPS, as earlier mentioned by High in reference to the adoption of mobile methodologies by oral historians. As such, aerial images can conceivably contribute to such immersive storytelling experiences by

⁴⁶⁷ Barthes, *Image, Music, Text*, 40.

providing a visual terrain that invites a mental perambulation, with landscape features acting as signposts for memory elicitation. The potency of the aerial perspective is harnessed to the conception that a sense of place is dependent on memory, and that landscape is invested with emotion through the connections formed between people and place. It matters then how these places are seen—through what lens and from what perspective. In *Desert Bloom*, Sheikh has securely harnessed memory to place and landscape evocative of Create's claim, that "The recollection of personal history is grounded in a particular landscape or set of landscapes."⁴⁶⁸ The photographs are used to elicit memory and in turn become documents that absorb those memories, and as such *Desert Bloom* can be seen as a series (an atlas) of memory maps that mobilize a sensory experience. They are in sense "active" rather than static images that encourage visual traveling, as the eyes move from one terrestrial signature to the next.

At first glance the aerial images comprising *Desert Bloom* bear some resemblance to those of Sophie Ristelhueber's *Fait*, examined in the previous chapter. However, upon closer investigation, distinctions emerge. If Ristelhueber's mandate in *Fait* was that of abstraction (i.e., how little "we" see from above), then Sheikh's counter stance is one of revelation (i.e., if one knows what to look for and how to read it, there is much to see). An important aspect that distinguishes Sheikh's aerial project from that of Ristelhueber is in his definition of place as distinct localities that occupy specific spatial coordinates and are inhabited by people with names and memories. For each photograph taken, Sheikh supplies the area's coordinates, as opposed to Ristelhueber, who intentionally avoids specifics of place to advance a universalist narrative. The power of Sheikh's aerial images is activated by the text that accompanies each photograph, which

⁴⁶⁸ Marlene Creates, quoted in Joan M. Schwartz's preface to the book, "Constituting Place of Presence: Landscape, Identity and the Geographical Imagination, in Marlene Creates, *Places of Presence: Newfoundland Kin and Ancestral Land, Newfoundland*, 1989-91 (St. John's: Killick Press, 1977), 1-18.

annotates the features of the images. This information is the product of the testimony of inhabitants and local pilots, which reminds the viewer that experience and event are not universal but rooted in specific places and lived by actual bodies.

Further differentiating *Desert Bloom* from *Fait*, is that the images that make up the latter project exuded a monumental quality as though the space and time held within the individual frames had been indefinitely arrested and contained. Whereas, *Desert Bloom* carries a register of transience that reflects a landscape is marked by the signatures of nomadic existence and military volatility. Sheikh concedes that his project can only act as partial contributions to the representation of the Negev; he does not claim that they have a masterful or iconic status. His attempt to depict the Negev as distinct and embodied therefore resists Orientalist interpretations of the desert as archetype.

Sheikh came to his aerial project through an intimate exchange with a Bedouin elder on the site of a recently demolished village of Al'Araqīb in the Negev. As he listened to the man's story in which he described that landscape just a few weeks earlier had been the site of a village, it occurred to Sheikh that the aerial view and the spatial context it would provide was essential to understanding a landscape so intensely in flux. At that moment he began to think about what this landscape would look like from above. What he did not know at the time was that these images would become demonstrative not only of spatial transformation but would also capture the passage of time, etched and stained into the ground.

Thus a conversation with a marginalized individual was the remarkable start to a visual project that incorporates a perspective associated with distance and a master view. An important aspect that makes *Desert Bloom* exceptional in a vast spectrum of aerial imagery is the artist's conviction that voices at ground level should be permitted to speak to their own representation

from above. If Colin Powell's presentation of satellite images of Taji Iraq can be understood as a prophetic exercise of the capacity of images to produce landscape, Sheikh here shows an openness to receiving information from the ground, rather than imposing his own meaning upon it. Subverting the traditional dominance associated with aerial views, Sheikh explains, "You have to learn what the land is offering you. And for me that is a long process."⁴⁶⁹ Like Trevor Paglen who professes to dedicating years of research to projects, Sheikh has for decades learned to ask questions of the land in many parts of the world through extended projects focused on the experiences of migrants (all of which involve some aspect of testimony on the part of the subjects).

An image that Sheikh identifies as pivotal in his learning process was one that pictures an area on which the recently destroyed village of Al'Araqīb once sat, and whose vestiges still remained (Fig.39).⁴⁷⁰ In this strikingly geometric image, is a darkened rectangular outline at the centre, which appears to contain patches of stain within. Surrounding this border are soft undulations of sand, which at the upper far-right edge becomes peppered with black dots, while the ground in the photo's bottom-left is patterned by small rectangular smudges. A series of curved lines snake through the composition—they are lighter in colour than the ground that they cut through and begin and end somewhere beyond the edges of the photograph. During an interview (2016) with author Teju Cole at the Brooklyn Art Museum, Sheikh describes the poignancy of the image for him—the complexity and abundance of signifiers it held in telling the story of displacement, home, and above all of resistance. Interpreting the image for Cole and the audience, Sheikh states, "What one sees is these small shacks in the scarified landscape above the rectangle at centre. The rectangle itself is actually the perimeter of the cemetery and when the village which

⁴⁶⁹ Slought Foundation, "A Conversation at the Brooklyn Museum of Art, with Fazal Sheikh and Teju Cole," April 14, 2016. https://slought.org/resources/erasures_al_araqib

⁴⁷⁰ According to Weizman, by 2018, this village had been razed by the Israeli government 103 times and rebuilt 104 times. Weizman, *Forensic Architecture*, 217.

surrounded the cemetery was razed to the ground, the villagers immediately set about building these protest tents just outside the space where their village had been on a near daily basis.”⁴⁷¹ In Sheikh’s description of the images, his mandate of revelation is made clear.

In 2014, Fazal Sheikh shared with Eyal Weizman the aerial photographs that he had taken of the Negev. In an essay entitled “The Conflict Shoreline,” Weizman reflects on Sheikh’s photographs, quickly identifying the crux of the relationship between aerial perspectives and “ground truth.” He writes, “While it is on the surface of the earth that the entanglement of land use, politics, conflicts, and climate change is played out, it is from the aerial perspective that it most clearly comes into view.”⁴⁷² Through this set of relationships, Weizman arrives at a novel approach to aerial images. Stepping away from more traditional metaphors that envision the land as seen from above as a text to be read, he describes them under more visual terms as “artifacts of double exposure: they are photographs of photographs.”⁴⁷³ As the desert floor becomes inscribed by the effects of climate forces, human enterprise and animal behaviour, “the surface of the desert thus resembles a photographic inscription, exposed to the direct and indirect contacts of human and climatic forces in way similar to how film is exposed to light.”⁴⁷⁴ Weizman continues, with a claim antithetical to those who advance that the aerial perspective renders the desert landscape into a cryptic collection of shapes and signatures, “For those willing and able to read its surface closely, the desert can reveal not only what is present, but also the subtle traces of what has been erased: traces of ruined homes and small agricultural installations, of fields and wells that can sometimes

⁴⁷¹ Slought Foundation, “A Conversation at the Brooklyn Museum of Art, with Fazal Sheikh and Teju Cole,” April 14, 2016. https://slought.org/resources/erasures_al_araqib

⁴⁷² Weizman, *Forensic Architecture*, 274.

⁴⁷³ Ibid.

⁴⁷⁴ Ibid.

be noticed under the grid of newly planted forests, as well as the dark stains of long-removed livestock pens” (Fig. 40).⁴⁷⁵

Ruins are among the most potent markers of histories of conflict. In the classical sense, ruins are often considered as shells of formerly illustrious monuments, which in their broken half-states inscribe the landscape with a syntax of memory that motion towards the past. Within the rubble of colonial destruction, empire takes possession again of territory, with art history as its accomplice, through the interpretation of ruins, which advance them as repositories of Romantic lamentation. Ann Laura Stoler contributes to this discussion in her 2008 essay “Imperial Debris,” where she argues that the tendency of the European imagination is to approach (and advance) ruins as “enchanted, desolate spaces” or treated as “dreamy icons of wistful romantic loss.”⁴⁷⁶ She argues that in “its common usage, ‘ruins’ are often enchanted, desolate spaces, large-scale monumental structures, abandoned and grown over. Ruins provide a quintessential image of what has vanished from the past and has long decayed.”⁴⁷⁷ Rather than thinking of ruins as sites of passive romanticization and the object form of destruction, Stoler insists that it is vitally important to conceive of ruination as an active force of this operation.

‘Ruin’ is both the claim about the state of a thing and a process affecting it. It serves as both noun and verb. To turn to its verbal, active sense is to begin from a location that the noun ruin too easily freezes into stasis, into inert object, passive form. Imperial projects are themselves processes of ongoing ruination processes that “bring ruin upon,” exerting material and social force in the present. By definition ruination is an ambiguous term; both an act of ruining, a condition of being ruined, and a cause of it. Ruination is an act perpetrated, a condition to which one is subject, and a cause of loss.⁴⁷⁸

⁴⁷⁵ Weizman, *Forensic Architecture*, 274.

⁴⁷⁶ Ann Laura Stoler, “Imperial Debris: Reflections on Ruins and Ruination.” *Cultural Anthropology* (Spring 2008): 194.

⁴⁷⁷ *Ibid.*, 195.

⁴⁷⁸ *Ibid.*

It is a useful lens that helps to better bring into focus the essence of Sheikh's *Desert Bloom* as a project that picturing the lines, stains, and patterned imprints that mark the Negev landscape gives representing to ruin as an active force, as something necessarily transient and transformative, something decidedly not static.⁴⁷⁹ Rather than portraying the Negev as a site of ruin, he captures it as a space of ruination, and in doing so resists the status of the monumental traditionally invested in the notion of ruins. Here there are no marble columns stoically resisting sun or providing a cradle for vegetative overgrowth. Instead, the ruination is performed through acts of erasure, eviction, destruction, their traces held in the marks in the ground, which hold more mechanical than poetic meaning. These are the imprints of bulldozer and trucks not melancholic evidence of the passage of time, which attributes no accountability to their provenance.

These are the objects and forces represented as patterns of shadow and light, line and shape in Sheikh's photographs. Through the concrete knowledge shared through the oral history of the inhabitants, these traces and stains are moved past abstraction, and become signatures of physical and chemical forces in the world. For example, viewers learn that the lines in the sand are from bulldozers, the stains on the earth are from the excrement of goats. Hence the prints on the ground represented in the photographs, for those who live on the land, are not marks evocative of art making, nor do they conjure poetic references, but are what remains of distinct mechanical forces controlled by humans (in this case, the Israeli army). It is in fact the text—rooted in concrete language—accompanying the images that allow the images to operate both as works of art and documents of evidence. Echoing Curtis who proclaimed that photographs cannot speak, Weizman insists that visual evidence (photographs are essential evidentiary documents) cannot operate alone but must be supported by discourse. Simply raising them to the level of evidence does not allow

⁴⁷⁹ Perhaps what makes Sheikh's *Erasure Trilogy* so successful is that it is a concession of the impossibility of the project of representation of ruin as a static entity.

them to speak for themselves. Likewise supporting Weizman's contention, are oral historians Freund and Thomson, who write, "photographs cannot tell stories. They can only provide evidence of stories, and evidence is mute; it demands investigation and interpretation. Looked at in this way, as evidence of something beyond itself, a photograph can best be understood not as an answer or an end to inquiry, but as an invitation to look more closely, and to ask questions."⁴⁸⁰ Sheikh's *Desert Bloom* offers just such an invitation for closer looking.

Through the aerial view he allows the Bedouins of the region to see "home" from an unfamiliar vantage point, which allows them new perspectives of place and new opportunities to argue their right of return. Meanwhile, viewers of the work are permitted to see this region and consequences of its conflict from a perspective other than what is offered through ground-based photo-journalistic reportage. It is by putting both views together, in the friction and alignment that occurs between above and below, that a more cohesive picture of place can be formed.

It may be helpful here to establish a working definition of "ground truth," which Eyal Weizman conceives of as a "set of surface relations" or "a form of translation from the surface of the film to the surface of the terrain."⁴⁸¹ He continues, "a variation of the process is used by meteorologists, remote sensing, or aerial interpreters to calibrate the analysis of images to the ground. This is necessary because there is never a one-to-one relation between aerial photographs—indeed between any photographs—and the reality they capture."⁴⁸² For Forensic Architecture, the interpretation of ground truth involves establishing material relations—"between differently shaded silver salt grains, or between differently coloured pixels, and the patch of earth they represent by patiently reading aerial images from the ground up. Inverting the process of aerial

⁴⁸⁰ Freund and Thomson, *Oral History and Photography*, 1.

⁴⁸¹ Weizman, *Forensic Architecture*, 289.

⁴⁸² *Ibid.*

image interpretation, we first endeavoured to study an element on the ground, then check how it registers in the historical aerial image, and then deduct how all other elements may do so.”⁴⁸³

In what Weizman describes as an effort to “establish and socialize the production of “ground truth” in relation to the RAF photographs taken in 1945,” Forensic Architecture collaborated with Zochrot, an organization committed to the memory of the Nakba, and Public Lab,⁴⁸⁴ through a kite project that served as a rudimentary system of aerial surveillance. Public Lab offered workshops to the Bedouin community of al-’Araqīb instructing them how to affix basic digital cameras to kites, whose aerial imagery could then be useful in building counter state claims for the land.

Conventionally such images would be acquired through aircraft equipped with specialized photographic and navigational tools, but as Weizman points out, this option was inaccessible for financial reasons, and unappealing due to the mistrust towards photographs taken from airplanes, which the Bedouins associate with the military and the police. This observation raises an interesting question in terms of how aerial photographs could be used in oral history projects. Aerial perspectives are potent communicators of power, as has been argued throughout the thesis, and have well-established associations with police, state, and military power. How might these sentiments of distrust or anxiety work in terms of memory elicitation?

⁴⁸³ Weizman, *Forensic Architecture*, 277.

⁴⁸⁴ Public Lab is an organization that seeks to promote community-based environmental monitoring from the air. It was founded in the wake of the 2010 BP oil spill disaster to break the information blackout that was imposed by the oil giant and US federal authorities on photographing the spill from the air. The organization works to empower communities to undertake their own aerial photography using improvised “community satellites” made of standard digital cameras to kites or small helium balloons. <https://publiclab.org/>

Mobile Storytelling in Stephanie Comilang's *Come to Me, Paradise*

In the final part of the chapter and as the thesis comes to a close, I turn to filmmaker Stephanie Comilang, whose film *Lumapit Sa Akin, Paraiso (Come to Me, Paradise)* (2016) will serve as a complimentary case study to Fazal Sheikh's *Desert Bloom* in considering the intersection between oral history, aerial perspectives, and situated knowledges and how the visual register can be used to activate this nexus. Set in modern-day Hong Kong, *Come to Me, Paradise*, a genre of film that Comilang classifies as "sci-fi documentary," follows three Filipina migrant domestic workers Irish May Salinas, Lyra Ancheta Torbela, and Romylyn Presto Sampaga on a shared day off from work. The movie's point of view is provided by a drone named Paradise, who Comilang conceptualizes as spirit-like, and whose role is to serve as a medium of communication between the women working in Hong Kong and their families back home. Offering both the eyes and the voice of the film as its narrator, Paradise, becomes an empathic lens through which notions of diaspora such as home, displacement and memory are examined.

The child of immigrant parents who moved from the Philippines to Canada in the '70s to escape political unrest, Comilang presently divides her time between Berlin and Toronto; she has described her worldview and her identity as informed by a fluid concept of "home."⁴⁸⁵ Growing up in Toronto, she identified a notable distinction between home life and exterior life, whose respective meanings for her shifted over time. This fluidity has translated into her art, where the notion of home has established itself as an enduring theme and consistent departure point for her practice. "For me," explains Comilang, "art has to be really personal, and home is the only place I can start from as an artist. The things I naturally gravitate towards are ideas around diaspora and migration, and how immigrants and migrants create spaces for themselves."⁴⁸⁶

⁴⁸⁵ Stephanie Comilang, telephone phone call with author Dec. 23, 2019.

⁴⁸⁶ Shannon Moore, "An Interview with Sobey Art Award Winner Stephanie Comilang, *National Gallery of Canada*

In this quest for authenticity, driven by a pluralized conceptualization of truth, Comilang makes films whose narratives are driven by multiple voices and points of view to consider how culture and society engage with salient aspects of the globalized world, such as mobility, capital, and labour. *Come to Me, Paradise*, is her second film; her first, a documentary called *Children of the King* (2011), was an exposé on the children of Elvis impersonators, a genre of performance that has a robust following in East Asian countries heavily influenced by his pop stardom. This film, according to Comilang came to be about American imperialism and familial relationships.⁴⁸⁷ Following *Come to Me Paradise*, is *Yesterday in the Years 1886 and 2017* (2017), another sci-fi documentary featuring Paradise, which recounts the stories of two Filipino migrants living in Berlin, one in 1886 and the other in 2017.

Following a methodology that privileges multiple perspectives and voices, *Come to Me, Paradise*, offers an extended meditation on the concept of home, whose multivalence is tethered to the apparatus of memory and the projection of the future. As will be shown, the Filipino diasporic dream is expressed by a return to the homeland, versus a resettlement abroad. Following Doreen Massey's claim that recollection of personal history is grounded in a particular landscape, the Philippines, consistently serves as that particular landscape around which Filipina memory and identity is formed.

The filaments that connect home, memory and place, form a circular flow of association where each become products and producers of one another. This serves as a suitable model for the circularity that describes the contemporary neoliberal capitalist system that drives an extensive

Magazine, January 29, 2020. <https://www.gallery.ca/magazine/artists/sobey-art-award/an-interview-with-stephanie-comilang-2019-sobey-art-award-winner>

⁴⁸⁷ Alexander Iadarola, "Lumapit Sa Akin, Paraiso (Come to Me, Paradise)," *DIS Magazine*, last accessed Sept. 25, 2021. http://dismagazine.com/discussion/82626/lumapit-sa-akin-paraiso-come-to-me-paradise/?utm_source=pocket_mylist

system of transnational migrant circulation. In this condition, cause (unemployment) and effect (separation from families) for migrant workers are equally devastating. Once again in these globalized labour systems, articulated by the lateral movement of bodies, and founded upon on and advancing vertical power structures, themes familiar to the thesis once again emerge. The intersection of these vertical and horizontal logics operationalize yet another recurrent theme, as migrants are invisibilized in their receiving countries by practices of marginalization. Borrowing from Weizman, migrant domestic workers could be said to be living on the threshold of detectability as they live and work in compromising domestic situations and the value of their labour is diminished, while they suffer from reduced societal visibility. These are all themes that get taken up by Comilang in *Come to Me, Paradise*, articulated through narrative and technical modalities that privilege multiple viewpoints and voices.

To establish the context for *Come to Me, Paradise* and the themes it explores and the methodologies it uses to do so, necessitates a review of the social, economic, and political conditions of neoliberal globalization that continue to force significant numbers of Filipinas to seek foreign domestic work. I will begin this section with a brief overview addressing the manner in which globalization has exacerbated inequalities for migrant workers along the lines of class, gender, race and ethnicity. Here I will reveal the factors particular to the Philippines that influence the relationships Filipina migrant workers form with the notion of home, a principal theme in Comilang's film. I will then carry over this real-world context to an analysis of *Come to Me, Paradise*, a hybridic film that draws a tension between the biographical and the speculative. My analysis will explore the importance of storytelling and oral testimony as a response and mode of resistance to the experience of the migrant domestic worker in Hong Kong. For instance, I will reflect upon how Comilang has engaged various mobile methodologies, which assume a layered

dimension in capturing oral histories of multiple people. As she records a migrant worker recording other migrant workers, the film becomes a palimpsest of personal histories. I will also consider Comilang's filmic treatment of time as a nonlinear construct as an apt method to capture the distorted experience of time common among migrant workers, which I see as an approximation of Langford's performative viewing of photo albums. Finally, I will conclude with an examination of Comilang's use of feminist critique to subvert drone ecologies.

Filipina Domestic Workers in Hong Kong

Women of the Philippines have a long history of institutionalized migration, whose Hong Kong legacy finds a particularly salient moment in the 1970s when the city began accepting an inflow of migrant workers.⁴⁸⁸ Currently there are approximately 200,000 Filipina migrant domestic workers employed in Hong Kong alone, while as of 2013, it was estimated that there were 10 million Philippine nationals living abroad in various states of citizenship.⁴⁸⁹ Over time, as the world become increasingly globalized, the Philippines established itself as a "labour brokerage state," which depends on neoliberal principles of labour export. By extension this has meant that the nation has also formed a reliance on transnational family practices, whose toll is felt by the families and whose profit is enjoyed by the state. Due to high unemployment and high rates of poverty in the Philippines, the number of overseas workers has steadily increased to "over 360,000 (98% female) in 2017, of which 54% were Filipina, 44% Indonesian, and the remaining 2% were from countries such as Thailand, Sri Lanka, India, or Myanmar."⁴⁹⁰

⁴⁸⁸ Maren Boersma, "Filipina Domestic Workers in Hong Kong: Between Permanence and Temporariness in Everyday Life," *Current Sociology Monograph*, Vol 67(2): 272-292.

⁴⁸⁹ Ibid.

⁴⁹⁰ Boersma, "Filipina Domestic Workers in Hong Kong," 278.

The outflow of women from the Philippines affects family structures both at home and abroad. While they leave behind immediate and extended families, including children and spouses, and are forced to participate in transnational family life at a distance, aided by technology, their arrival in host nations reformulates the domestic framework there by allowing middle-class women to return to the workforce. To describe this “international transfer of caregiving,” Rhacel Salazar Parreñas offers the concept of the “care chain,” which “calls attention to the commodification of household work among women; in this division of labour, a privileged woman pays a migrant woman to perform her housework, and she in turn passes on her household work to a woman left behind in her country of origin.”⁴⁹¹ Parreñas’ critique of the “care chain” points to the less discussed ripple effects on the departing end of migration, where domestic care is outsourced according to a tiered framework. This signifies another potential financial cost for which the migrant worker is responsible, and a downgrading of labour value, as Parreñas notes that “economic value of care work diminishes as it gets passed along.”⁴⁹² Furthermore, the “care chain” or “international division of reproductive labour,” argues Parreñas, “reifies the notion that only women do care work, insufficiently examines local inequalities, for instance ethnic and racial inequalities (as opposed to inequalities across nations), and inadvertently ignores care that occurs outside the household, in particular the institutional care provided in hospitals.”⁴⁹³ Finally, she concludes what is absent from the formulation of the “care chain” is the influence of the state, which along with economy and community define the organization of care.

⁴⁹¹ Rhacel Salazar Parreñas, “The Reproductive Labour of Migrant Workers,” *Global Networks* 12, 2 (2012): 269

⁴⁹² *Ibid.*

⁴⁹³ Parreñas, “The Reproductive Labour of Migrant Workers,” 270.

Placelessness and Permanent Temporariness

Unlike their counterparts, Filipina domestic workers express little desire to resettle in their host countries. “Contrary to their counterparts from El Salvador, Dominican Republic and Mexico,” writes Parreñas, “migrant Filipina workers aspire to return home to the Philippines. They imagine, plan, and invest in a future based in their homeland and remit significant portions of their earnings to invest in the reproduction of their families in the Philippines.”⁴⁹⁴ She notes that while these women fit “the classic definition of diaspora as those displaced from a homeland,” they consistently consider the Philippines as home, and express an interest in returning there, although they rarely do.⁴⁹⁵ As such, observes Nicole Constable, “Filipina domestic workers exist in a perpetual state of being ‘at home, but not at home’.”⁴⁹⁶

This ambivalence towards settlement and their marginalization in society, lead these migrant workers to live in what Parreñas calls a state of placelessness. This term, she clarifies, does not reference nomadism, but rather describes the “absence of a fixed geographic space that migrant Filipina domestic workers can call their own.”⁴⁹⁷ Placelessness is not an exclusively spatial condition, but assumes temporal dimensions as well, as time can be as uncertain as place for migrant workers. In Hong Kong, migrant workers are employed on the basis of temporary two-year contracts, however, many remain for multiple contracts, so that their situation, writes Maren Boersma “can be characterized as permanently temporary.”⁴⁹⁸ To capture this condition, says

⁴⁹⁴ Parreñas, *The Force of Domesticity: Filipina Migrants and Globalization*, (New York; London: New York University Press, 2008),92.

⁴⁹⁵ *Ibid.*, 89.

⁴⁹⁶ Nicole Constable, “Tales of Two Cities, Legislating Pregnancy and Marriage Among Foreign Domestic Workers in Singapore and Hong Kong,” *Journal of Ethnic and Migration Studies*,46 (3): 1-17.

⁴⁹⁷ Parreñas, *The Force of Domesticity*, 98.

⁴⁹⁸ Maren Boersma, “Filipina Domestic Workers in Hong Kong: Between Permanence and Temporariness in Everyday Life,” *Current Sociology Monograph*, Vol 67(2):273.

Boersma, “scholars have coined the term ‘permanent temporariness,’ which signifies “both the static experience of being temporary’ and the disciplining power of a temporary status.”⁴⁹⁹

Contractual constraints affect the women’s experience of time, which further aggravated by the uncertainty related to their length of their stay overseas. These periods fluctuate according to the changing needs of their families, personal goals, or a hesitation to return to reduced job opportunities of the Philippines. In contributing imaginatively and financially to a projected future back home, whose goals are highly motivated by memory rooted in that location migrant workers are extended across past, present and future — “living” somewhere in between home and away. This extended “working for the future” paradigm interrupts time in other ways, as Boersma observes that “task-oriented time crosses over so that labouring overseas for multiple years becomes one extended act of caring.”⁵⁰⁰ With the goal of returning remaining elusive and something always situated “out there,” or when circumstances are such that a return to the Philippines is but a pit-stop towards the next departure, the notion of linear time becomes interrupted.

Time and Space in *Come to Me, Paradise*

Come to Me, Paradise opens with an aerial view of a spectacular rural landscape in the Philippines. It is a vibrant green stretch of space, patterned with patterned with curious domed hills of brown, whose forms are made even more dramatic against the bright blue sky (Fig. 41). Paradise, who is voiced in Tagalog by Comilang’s mother, establishes this as “home” and explains how the women who once lived in this place have left. Subtitles that run on the bottom of screen translate Paradise’s monologue:

A long time ago me [sic] and the women lived here under the hills. We were the strongest in society and also the communicators. We held everything together. Then slowly we began

⁴⁹⁹ Ibid.

⁵⁰⁰ Ibid.

to lose our homes, our resources. Since we were the strongest, we left to find new resources to send back. My kind are messengers to the women. Through me they upload their daily lives which I send back to their family for download.⁵⁰¹

Next, the drone is hovering high above Hong Kong, where we learn that she is waiting for Sunday, the one day a week when the domestic workers meet. The congregation of thousands of women at once, makes their “signal” strong enough so that she can locate them where she will interface with them to upload their videos and messages to deliver to their families back home. During the women’s workweek, Paradise finds herself in limbo, a kind of aerial flaneur. Lonely, isolated, and without purpose, she reflects on notions of home, memory, and her personal belief systems. Her preferred site of nocturnal rumination is high above the city’s skyline. As she shares her existential longings, which become projected as the viewer’s one, she asks: “What do I believe anyway?” (Fig. 42).

This is a form of slow time, and its purpose is manifold. These nighttime hovering scenes give Paradise a moment to reflect, at which point viewers learn that that she is in possession of a consciousness that shares in the migrant experience. These segments also serve as pauses in the “active time” that forms the majority of the film, while serving as a marker of time passing in the narrative. Finally, these aerial scenes, overlaid with a monophonic soundtrack—a kind of lightly pulsing electronic rhythm—gives texture to time and invests it more deeply with an emotional tenor.

In the final scene, Paradise is once again hovering above the rural Philippine landscape, as she returns, where she began, at “home.” Following Massey’s claim that personal histories are tied to particular landscapes, the significance of these early and final scenes becomes evident—this is landscape that informs the memory and by extension, the identity of Paradise, as it does for the

⁵⁰¹ Stephanie Comilang, *Come to Me, Paradise*, 2016.

migrant workers. This landscape that appears at the beginning and again at the end provide the only clear signposts of narrative direction, as all else that occurs in between these points unfolds irregularly and in no particular order. So could it be said of the uncertain “journey” of migrant workers—they depart from home and use it as an imaginary destination point to return to. For many, “home” in its ideal sense will exist only in the imaginary, as Boersma showed, despite expressing a desire to return to home, few seldom do.

Time, then is treated by Comilang as an active sense. It is given significance while never given image, much like Paradise is treated as a character of the film rather than a modality of its making. Paradise provides the optics of the film, yet she is never seen. Over the course of the twenty-six-minute film, she comes to play myriad roles. She is the film’s reluctant omniscient narrator (she sees all but does not claim to know all), and is a principal, yet invisible character in the narrative, serving as a medium of communication between the migrant workers in Hong Kong and their families left behind in the Philippines. She is the viewer’s guide to the film and guardian to the women. In her range of role, the invisibility of her body despite the essential labour it performs, and in the sense of displacement that informs her identity, she becomes a convincing technological proxy for a migrant care worker. While much of her time seems spent idly in wait of the women, her timeline is still controlled by their needs, her visits home are assumedly brief and dutiful, and her foreign existence is an act of obligation to the women she guards over.

While approximating the multifarious roles of migrant care worker, Paradise as a platform of communication also comes to speak for another essential aspect of their experience abroad, whereby technology serves as a conduit of transnational family care. While technologies such as smartphones and personal computers, and applications such as Facebook, Skype or Whatsapp have helped to keep families “together,” Valerie Francisco-Manchavez argues that neoliberal

globalization, which includes rapid developments in technology has likewise contributed to accelerations in systemic outmigration of people from developing countries such as the Philippines. Filipina translational families counter the challenges of living at a distance through adapting creative technological solutions in an effort to sustain their relationships under circumstances not of their choosing but are part of engineered flows of labour migration that separate families for extended periods of time. However, argues Manchavez, “the very development of technology lauded by migrant workers and their families was made possible by neoliberal globalization and the specific migration in this era – systemic-induced labour migration and massive illegalization of migrants in destination countries.”⁵⁰² As such, technology, as it participates in “global capitalism for profit, has transformed communication into a fetish commodity – a natural, matter-of-fact aspect of migration.”⁵⁰³ While Filipino migrants and their families approach technology as a consolation to difficult life circumstances, the “Philippine state – the very architect of the multibillion-dollar migration industry – also praises (and profits from) the fact that technology can keep transnational families together.”⁵⁰⁴ So even though new media technologies provide a means of constant communication and connection for migrants and their families behind, their connective abilities for which they are celebrated necessitates the separation of family members in the first place.

Social media such as Facebook or Skype are examples of such platforms, which through creative approaches of their users, have permitted families living at a distance the possibility of a “multidirectional care model.” These now ubiquitous platforms, permit transnational families the opportunity for communication exchanges in a manner that is spontaneous, affordable and in real

⁵⁰² Valerie Francisco-Manchavez, *The Labor of Care: Filipina Migrants and Transnational Families in the Digital Age*, Urbana: University of Illinois Press, 2018, 69.

⁵⁰³ Ibid.

⁵⁰⁴ Ibid.

time. The combination of these factors has greatly changed the dynamics of sustaining family relationships, since the era when letter writing and/or phone calls were the dominant mode of communication. Following a longitudinal study founded on interviews between migrant workers and their families back home that explored their communication practices, Manchavez found that the aspect of these technologies consistently considered the most valuable, was the visuality they afforded. When asked what the most challenging aspect of their separation was, the responses of both the migrants and their family members separation formed a common thread that focused on sight. A subset of their responses include: “I can’t see them”; “I can’t see them grow up”; “I don’t know what they look like anymore.”⁵⁰⁵

The visual capabilities of social media through video calls or image sharing, assuage some sadness in offering the women an ability to watch their children grow, while for the families it provides an important window into the lives of mothers, wives, and sisters. While social media platforms permit a visual portal into lives both home and abroad, they also provide an opportunity for self-publication. In accordance with Doreen Massey’s claim that place is very much bound up with the histories told of it, who tells them and how, social media platforms provide a site where the women can tell their stories both through image and words. Massey’s statement provides an effective framework of *Come to Me, Paradise*, as its narrative is carried by interviews and vignettes, which in the legacy of domestic workers in that city, are contributing as much to histories of Hong Kong as they are of the Philippines.

Understanding the essential role of technology as a means of communication and care, while acknowledging its problematic position within the greater neoliberal context, helps to better contextualize the role of Paradise in the film, while the value placed on the visual aspect

⁵⁰⁵ Manchavez, *The Labor of Care*, 69.

technology by transnational families explains why images serve as the key signatures of *Come to Me, Paradise*. Supporting the aerial shots are close-ups of hand-held footage captured by smartphones, some of which is provided by the film's protagonists.⁵⁰⁶ Contrary to the aerial shots that are stylized and serve as contemplative pauses in the narrative action, the smartphone footage is raw, fast-paced and unpredictable in its temporal framing as one clip moves suddenly to another.

Comilang shares that when planning the film, she wanted to give a counter point to smartphones, and arrived at the drone.⁵⁰⁷ Adopting a forensic lens as employed by investigative researchers, the smartphone footage and situated knowledges (testimony), can be seen as a means of verifying the aerial shots, a practice that Weizman refers to as “ground-truthing.”⁵⁰⁸ With this choice, Comilang admits to practical gains as well, having at her disposal a highly coveted tool of cinematography, as indeed rare are films without scenes filmed from aerial perspectives—even more exceptional are films that integrate them as a cast member as is the case in *Come to Me, Paradise*. Dividing the filming between technological modalities, namely the aerial and the hand-held not only allowed for Comilang to explore a range of viewpoints, the combination of these tools also makes for an accurate representation of a contemporary networked space articulated by spatial technologies and personal devices. And given the sense of placelessness that Parreñas identified as common to migrant experiences, mobile technologies become a crucial instrument as a platform for virtual multi-directional care and for some the closest approximation to home.

⁵⁰⁶ Further pushing the boundary between fact and fiction, Comilang describes how some of footage that is used is actual biographic video filmed by Salinas, who is (or was) a journalism student. She discovered Salinas (V-logger Xrysh) after finding her channel of “ambush interviews” on YouTube. Salinas subsequently became Comilang’s principal contact with the migrant workers in Hong Kong.

⁵⁰⁷ Alexander Iadarola, “Lumapit Sa Akin, Paraiso,”

⁵⁰⁸ See Weizman, *Forensic Architecture*; Fuller and Weizman, *Investigative Aesthetics*.

Making Space, Telling Stories

Each Sunday, their sole holiday of the week, the three protagonists and thousands of other migrant workers come together in Statute Square in the “Central” financial district in downtown Hong Kong. Here they form makeshift enclosures and seating areas out of disassembled cardboard boxes, which serve as temporary dwellings where the women share food, drink, prayer, and exchange caregiving rituals such as pedicures (Fig.43). In Comilang’s sci-fi account, the gathering of the women generates a signal that summons Paradise, who arrives to receive the uploads of the women’s messages, photos and videos to be transmitted back home by her.⁵⁰⁹ The location of Central as a staging ground for feminized practices of care amidst the architectures of economic and commercial power, makes for an ironic background against the ephemerality of the cardboard structures, and the intimacy of food exchange and talk. Central, as an established meeting ground is an example of “a geographies based ethnic enclave,” which is a noted strategy used by migrants to counter their exclusion from dominant spaces of society.⁵¹⁰ Notably, it is a hybrid space that extends between interior and exterior, as certain areas are covered but lack walls, thus there is no definite boundary between “out” and “in.” Further solidifying the hybridity of the space, a quality that Comilang revels in, is the fact the women are surrounded by luxury brand stores and international banks, while they, the marginalized sit on broken cardboard boxes on the cement ground, making this both a space that during the week refuses the marginalized, while on Sundays becomes home to them.

This too is a landscape—a microcosmic neo-liberal model of a global trend that has encouraged “alternative circuits of survival” due to increased poverty and unemployment in

⁵⁰⁹ Ibid.

⁵¹⁰ Parreñas, *The Force of Domesticity*, 99.

developing countries. Such circuits function largely in the shadow economy, with domestic work and the sex trade industry emerging out of this crisis as feminized forms of “export” from developing countries. Upon visiting Central for the making of the film, Comilang observed that many women were engaged in activities that she herself could imagine doing at home, such as leisurely reclining while scrolling on smartphones. That Comilang identifies smartphone use as a kind of domestic activity reveals how technological practices have become absorbed within that lexicon of domestic behavior. Performed on portable technology, these practices then become extracted from a static domestic space to become mobile behaviours.

With an enduring interest in the concept of “home,” Comilang looks at its possible recreations and adaptations, recognizing it as a fluid, polyvalent entity—a place where one dwells, lives, works, is returned to or isn’t. As bell hooks once said, “home...is no longer one place. It is locations.” Through her interrogation of notions of home in the context of migrant workers, Comilang’s film aligns with Steven High’s investigations of displacement. Through the moments of intimacy as the women openly share aspects of their experience, she reinvests the emotional content and cultural meaning that High argues displaced workers have been robbed of. Like High, Comilang uses storytelling practices as a modality to navigate or make meaning of displacement.

As approached by Comilang, storytelling becomes a strategy of resistance among migrant workers that can be seen as an act of making place within a space controlled by power. The narrative of *Come to Me, Paradise* is formed through a montage of drone footage, personal vlogs, and “ambush” interviews of other domestic workers by one of the film’s protagonists (and by extension, Comilang herself). It is here that an activation between film, photography and oral history is made as Comilang harnesses examples of the mobile methodologies and immersive technologies mentioned by High. Overall, the film may be considered an exercise in mobile

interviewing, but there are scenes where this practice is consciously highlighted, as Irish May Salinas, under the handle, “Vlogger Xrysh” spontaneously interviews women she meets in Central. Colloquially greeting one young woman in Tagalog, she asks, “Sis, how is your stay in Hong Kong? [...] What is it like being a domestic worker abroad?” To which the woman replies, “Oh my god, you have to swallow everything.” The background of this “ambush interview” as referred to by Salinas, is filled with the reverberating din of the voices of women who have gathered in this echoing space, which urges the viewer to consider that the experience shared over the interview likely holds similarities to that of many others in this community.

Not seeking to create a smooth visual flow through the sequences, Comilang stitches the segments together to form a discordant, yet curiously “logical” mosaic of clips. The filming moves between from high above the city, to street level, between interior and exterior settings, capturing solitary and collective experiences. The drone shots provide overviews and distance, which inserts a punctuation into the narrative to allow for contemplation, while the smartphone footage is raw and at times, uncomfortably intimate. In one such scene, Salinas is shown in her small domestic quarters, brushing her hair in using the screen of her cellphone as a mirror. At a certain point she begins to sing Justin Bieber’s “Love Yourself,” using her hairbrush as microphone, as she stumbles over her words, she grimaces and begins again. It is this lack of editing, this retention of error, the capturing of care rituals so profoundly intimate that are intended for mirrors and not cameras that advances a sense of authenticity to the film. An expert in subverting visual paradigms, which she does on many occasions throughout the film, here Comilang uses the close-up and the handheld to show novel viewpoints of the world of migrant workers, a title often attributed to aerial perspectives, as these interior shots offer a glimpse of a spaces and activities rarely seen.

The jostling of time and space in the patchwork of vignettes requires viewers to constantly relocate themselves in settings of limited context, hinting towards the higher-stakes experience of domestic workers who live in constant and precarious states of relocation. This mobile method of interviewing, during which time Salinas stops no longer than a few minutes before moving on to the next interview successfully captures both the sense of placelessness and permanent temporality common to the migrant experience. These themes are further explored in the content of the “ambush” interviews, as Salinas asks the random women she encounters how long they have been working in Hong Kong and how their experience has been so far.

Meanwhile the randomness of the vignettes offers an effective framework, for the nonlinear sense of time that frequently describes the diasporic condition. This blocked sequencing of time, where one scene skips quickly to one seemingly unrelated, reflects a characteristic feature of domestic helper narratives observed in studies involving group interviews. Hans J. Ladegaard notes, for example, that in response to interrogative prompts the women often respond with “diffuse stories”, whereby “a chunk of story is followed by a chunk of multi-party conversation glossing, clarifying and amplifying aspects of the story chunk just told.”⁵¹¹ This seemingly random formulation of narrative that operates around “snapshots” that are never fully flushed out, encourages the film to work along similar logics as a photo album. Within that structure there is something of the narrative control that Langford observed in photo albums whereby story telling is influenced according to which pictures were visited and in what order.

In approaching *Come to Me, Paradise*, as an album—a storehouse of memories which generate multiple narratives—invites Langford’s conceptualization of viewing it and the discourse that emerges from it as a performative event. The snapshot effect is amplified near the film’s end

⁵¹¹ Hans J. Ladegaard, “The Discourse of Powerlessness and Repression: Identity Construction in Domestic Helper Narratives,” *Journal of Sociolinguistics* 16/4, 2012:470.

when Paradise uploads the women's videos. As the women hold up their phones to interface with Paradise, their images quickly flash past the screen forming an ephemeral album which gives a fast-paced tour of the picturable moments that constituted their weeks (which are vastly different from the activities unpictured) (Fig. 44). As viewers, we are given the opportunity to participate in the performance, and to understand our respective places within a globalized narrative that puts "us" *here* and "them" *there*.

The multiple random vignettes assembled together to form this "photo-album" film give some idea of the realities of both the individual and collective experiences of migrant domestic workers. This again speaks to another challenge outlined by High, in that in oral history projects (which is in part what *Come to Me, Paradise* is), individual diasporic experience must be understood distinctly and personally. This is to say, that the stories of migrant domestic workers should not be glossed into a homogeneous group narrative but recognized and valued for the specifics of their experiences. By using a variety of technologies and modalities of "new" media (smartphones, digital cameras, drones, handheld video camera, selfie sticks, v-logging, social media) that permit the inclusion of aural and video components, Comilang mobilizes immersive storytelling experiences in ways that define each of the protagonists as individuals. Thus, she represents their life stories as particular, which through their friendship share some collective attributes. This treatment works to resist that static labeling that can be placed upon the displaced.⁵¹²

The moments in the film when the drone receives the women's uploads take the form of a series of snapshots that pass quickly across the screen; these include playful selfies, convivial

⁵¹² I offer that other new modalities yet to be explored in the practice of oral history include aerial views, meaning that satellites, drones, and other aerial objects and vehicles could also be included on the growing list of "new" media.

group photos, meals eaten, and things seen. Paradise explains that these images, which are in fact film stills, form a part of her: “My solitude is the same as the other women, because all the videos they make are forever stored in my cache. Once transmission back home is completed, they live inside me.” In this regard, Paradise performs a mode of seeing reminiscent of watchful guardianship rather than the surveillant stare normally associated with drones and aerial views. Rather than collecting memories (data) from the women to exploit them for profit or power, she assimilates them as though they were her own experiences. Paradise’s watchful dedication can be seen to subvert a drone manoeuvre known in military contexts as “persistent presence.” This term describes the drone’s ability to remain aerially localized for extended periods of time allowing them to perform “pattern of life” analysis of those below in an effort to assess threat via human behaviour.⁵¹³ Unlike the persistent presence of military drones, which produces troubling ambient noise that is a source of trauma for the surveilled and targeted, Paradise is silent, and goes seemingly unnoticed by the women.

To subvert the “traditional” militarized applications of drones, Comilang endowed Paradise with “human, female-like qualities through its movement and voice.”⁵¹⁴ Like this, she says, “the viewer is always looking at the world through the drone.”⁵¹⁵ Indeed, Paradise’s manner of seeing feels too empathetic and too random for militarized drone vision, which is touted for its cold precision. The way in which the world is presented to the viewers, sometimes through a desperate panning of the scene, or at others via wide panoramic gazes annotated by self-talk, problematizes the viewers conception of what or who she is. Through feminist critique, endowing Paradise with a female voice, and through operative behaviours that deviate distinctly from typical drone

⁵¹³ Gregory,” *From a View to a Kill*,” 200.

⁵¹⁴ Stephanie Comilang quoted in Alexander Iadarola, “Lumapit Sa Akin, Paraiso (Come to Me, Paradise),” *Diss Magazine*.

⁵¹⁵ *Ibid*.

mandates Comilang effectively subverts the drone as war machine. Considering its capabilities as a benevolent instrument, she removes it from the “kill chain” of aerial domination and questions its position within the “care chain.” While remaining above (and sometimes next to) the women, Paradise offers no strategic analysis of their daily life patterns and admits to knowing little of the whereabouts during the workweek. She regards their weekly reunions in the spirit of ritual, where following the uploading of the videos, she metabolizes their activities and routines, and shares the emotions conveyed through them. As such, Paradise carries a more compassionate payload, whose “meta data” of emotion and memory remain with her, while she delivers their material iterations in the form of videos and photos in act meant to sustain rather than destroy marginalized populations.

Also interrupting traditional drone logic, is that Paradise is not remotely controlled by anyone, but responds intuitively to the women. This agency would suggest that she is an example of autonomous tech, which is the new benchmark for innovation that brings a novel and expanding range of philosophical and practical problems. However, Paradise seems less robotic than phantasmagorical or spiritual, providing both insight and overview. While Paradise does not provide all of the film’s footage, there is the sense that she the medium through which the world is seen. Watching the film through her while being privy to her ruminations that are voiced through an interior monologue advances a sense of embodiment, as though we, on the other side of the screen are contained in her or are a part of her. This easy sense of hybridity, despite the fact that it is common knowledge that drones do not work like this – they do not *embody* – this is the supposed beauty of drones, that they are “unmanned.”

Paradise’s female voice which troubles the masculinist associations with surveillant technologies, also contributes to a broader conversation around gender and power that often

becomes articulated through technology. Notable instances of this paradigm can be found in AI-enabled voice assistants and AI bots that feature gendered voices, names and appearances.⁵¹⁶ Customer-facing bots in the service industry as well as in domestic contexts in the form of “smart” thermostats like the Nest or home surveillance systems such as the Ring have become increasingly prevalent since the 2010s when they entered the mass consumer market. Likewise growing in popularity are voice-activated assistants such as Apple’s Siri, introduced in 2011, followed by Amazon’s Alexa, Google Assistant and Microsoft’s Cortana, all of which feature female-sounding voices as the default setting.⁵¹⁷

Through the guardianship offered by Paradise, Comilang interrupts the traditional role of domination or exploitation associated with aerial views and technology more broadly. Rather than a machine that gathers intimate knowledge, as a means to cultivate more control or as a third party data collector as in surveillance capitalism, Paradise absorbs the memories of the women and carries the burden of their experience. As such there is an empathetic cyborgian transference of human and machine qualities, which subverts the typical crossover that has been encouraged in the innovation of technology, whereby personal data can be used towards exploitive ends. Since the Industrial Revolution, driven by ingenuity and technical development, humans are conceived of as increasingly machine-like in a never-ending quest for productivity, a constantly unattainable goal that often dehumanizes workers. Meanwhile, technology, notably AI, is increasingly designed (or promoted) to be more human-like in its desire for autonomy and its ability to imitate the

⁵¹⁶ “Siri, Alexa, Cortana, and Google Assistant, which collectively total 94% of the U.S. market share for smartphone assistants have traditionally featured female-sounding voices.” Caitlin Chin and Mishaela Robinson, “How AI Bots and Voice Assistants Reinforce Gender Bias,” Brookings Institute, Nov.23, 2020 <https://www.brookings.edu/research/how-ai-bots-and-voice-assistants-reinforce-gender-bias/>
As of July 2021, Amazon now offers a “male option” for its voice, as well as an option that features celebrity voices of Shaquille O’Neal, Melissa McCarthy, and Samuel L. Jackson that are programmed to respond to select questions. Google Assistant also offers the option of a male-sounding voice. <https://www.techhive.com/article/3626369/how-to-enable-alexa-new-male-default-voice.html>

⁵¹⁷ Ibid.

anthropomorphic (such as in the case of Amazon’s Alexa), or biological (as in “Erica” the “most humanoid” robot).⁵¹⁸

This feature enforces gender biases on the service end, while reflecting the biases and demographic disparity of the teams designing the tools. An extensive report prepared by UNESCO,⁵¹⁹ illustrates how the feminization of these assistants such as Alexa, normalize gender biases that describe women as subservient as “she” diligently responds to curt or hostile commands without any sense of her own agency. Sexualized stereotypes are enforced as in when, for example, Siri is called a slut or a “bitch,” the programmed response is: “If I could blush, I would.” Cited in this study is interdisciplinary sociologist Safiya Umoja Noble, who has observed that commands directed at voice assistants —such as “check the weather,” “find x” or “call y”—function as “powerful socialization tools” teaching people about the “role of women, girls, and people who are gendered female to respond on demand.”⁵²⁰ The authors of the Unesco study likewise offer that constantly representing digital assistants as female gradually “hard-codes” a connection between a woman’s voice and subservience.”⁵²¹ While Harvard researcher, Calvin Lai, who studies unconscious bias explains that gender associations are solidified through the frequency at which people are exposed to such examples.⁵²²

⁵¹⁸ Erica was designed and created in 2015 through a collaboration between Osaka University, Kyoto University and Advanced Telecommunications Research Institute International Advanced Described as “an advanced android designed as a research platform to study robot-human Interactions,” Erica has the appearance of young, attractive, petite Japanese woman and is capable of “understanding natural language, has a synthesized human-like voice, and can display a variety of facial expressions.” “Erica,” *Robots: Your Guide to the World of Robotics*, Accessed Sept. 2, 2102

<https://robots.ieee.org/robots/erica/#:~:text=Erica%20is%20an%20advanced%20android,Year%202015%20Type%20Humanoids%2C%20Research>

⁵¹⁹ UNESCO and Equal Skills Coalition, *I’d Blush If I Could: Closing Gender Divides in Digital Skills Through Education*, UNESCO Report, 2019.

<https://unesdoc.unesco.org/ark:/48223/pf0000367416.page=1>

⁵²⁰ *Ibid*, 106.

⁵²¹ *Ibid*.

⁵²² Calvin Lai quoted in *Ibid*.

The intimate narrative and filmic devices that Comilang employs consistently throughout her oeuvre, cause *Come to Me, Paradise* to not so neatly fit either category of its hybrid definition—it seems too feasible to be sci-fi, and too intimate and flexible to be documentary. Rather than a distanced resume narrated by authorial host towards some pedagogical end, the film carries something of an imagistic epistolary or confessional. This hybridity, which makes Comilang’s work equal parts art, testimony, and evidence aligns her with Fazal Sheikh. The similarities do not end there, as both artists use aerial views to honour and amplify ground-level testimony, rather than applying a “master view” to overwrite these terrestrial narratives. Sheikh and Comilang both respond to the information given to them through first-hand accounts and use this knowledge to produce compelling projects that ask their viewers to reflect upon the meaning of home, the pain of displacement, and the insistence of the return. In both cases, they are showcasing individuals and their collective experiences who and which are often made invisible through global politics.

In the closing scene of *Come to Me, Paradise*, the viewer finds themselves again hovering over the lush green landscape that opened the film. Here the framing is slightly unstable as Paradise pans over the rolling hills; the frame is like a transparent container holding light and space and within that too, a quality that seems to defy gravity. It is an image that floats. Paradise takes her departure through a poem she has written on meditating, its final lines being: “While all our desires and fear; amass here offline; so far from the tower lights.” Comilang admits that the poem is a product of algorithms, created by inserting keywords into an online poetry generator, and the lines are, like the film in its entirety, both reflexive and prophetic. As Paradise pans across the hills, there are small indices of the human made visible through flecks of colour too saturated to be

natural. And perhaps it is the absence of the human that may urge consideration as to where those missing bodies are – bodies that we see only through her eyes.

Conclusion

Aerial perspectives, as products and producers of aerial technologies continue to be salient in news stories, either by contributing to the narratives or through their reportage: planes and helicopters drop bombs in Syria (and elsewhere), waterbombers fight wildfires in Greece, Turkey and British Columbia, passenger jets contribute to carbon emissions, cargo planes evacuate Afghans, drones perform search-and-rescue missions in the Mediterranean involving boatloads of Syrians and other refugees attempt to reach Europe, and satellites are used to chart the movement of all. Thanks to aerial technologies, including, but not limited to, satellites and drones, I have for the past five years, watched all these events unfold, from above. And yet, I am not “above it all”; I have been for the most part, in front of my computer screen in my living room in Montreal. I have not been looking *down on* or *over* the world and its events (most of them harrowing, I might add), but *into* the world, from above. This speaks to the transmigration of aerial perspectives through images, which also gives to a conundrum of orientations—problematics that I became aware of in the early stages of my research.

My initial interrogation of aerial views was influenced by Hito Steyerl’s conceptualization of the image, which she describes as a “condensation of social forces.” These forces, she explains, materialize into reality and in the passage through the screen arrive on the other side profoundly transformed and battered, so that people live in a half-destroyed wreckage of images.⁵²³ Following this, I wondered about the transformations experienced by aerial perspectives as they travel from “up there” to “down here,” through images. As aerial views are now ubiquitous in visual culture,

⁵²³ Hito Steyerl, “Walking through screens: Images in transition.” In Carol Squiers (Ed.), *What is a photograph?* 70-75). New York: International Center for Photography, 2014: 70.

they are now frequently encountered through images. This means that the trajectory of these images is not so much vertically described as it is horizontally, as they cross screens as per Steyerl's conceptualization. However, what I would come to understand is that while the dissemination of these images may not occur around distinctly vertical logics, the production of them certainly was. This thesis is undergirded by the claim that vertical politics govern aerial views and one of my goals has been to illustrate the myriad manifestations and effects of these power structures.

Aerial views are no longer reserved to what is glimpsed from an airplane window or to specialized survey photographs; aerial views in the digital realm are everywhere, every day. Aerial images are for the most part viewed from a perpendicular or oblique orientation as most people are interacting with them on computer or phone screens. Rare, I imagine, are perfectly oblique orientations to aerial images in colloquial contexts, and yet that is the perspective from which some images are taken, particularly those by sensing technologies such as satellites. Thus, there is within aerial images, a conflict of perspectives, in that the angle of capture does not necessarily equal the angle of their viewing. It could be said that the perspectives and distance of sensing technologies strains the senses, as a viewer struggles to find an anchor point or some useful index of scale. Matthew Fuller and Eyal Weizman define "sensing" as "the capacity to register or be affected," and "sense-making" as "the capacity for such sensing to become knowledge of some kind."⁵²⁴ These two definitions provide a useful framework for my research project which was an extended exercise at making sense of sensing.

In the thesis, I endeavoured to bring to light the significance of the early years of the new millennium and how it set the stage for the current "post-truth" moment. Mis- and disinformation

⁵²⁴ Fuller and Weizman, *Investigative Aesthetics*, 33.

which has found fertile ground on social media platforms such as Facebook and YouTube, have been effective in polarizing societies according to political ideologies. This paradigm reached a notable height in the U.S. during the 2020 federal elections and continues to impede the management of the pandemic worldwide, as disinformation circulates and competing ideologies form divisive camps. The case studies included in the thesis were chosen to help illustrate that the post-truth moment is not a spontaneous product of technology and corrupt politics but was a condition that has deep historical and art historical roots. Technology and vertically ordered power structures contributed to this troubled era, as did images whose fragile documentary status has ebbed and flowed through the years.

What my research project sought to illustrate was that it is not “technology” *per se* inflicting significant and often deleterious effects on social and political frameworks, but rather it is the manner in which technology is intersecting with politics and power. This is to say, that instead of putting a concentrated focus on the technologies themselves, the thesis uses landscape as a lens to investigate the reflexive relationship between aerial technologies and their extended cultural environments. What I attempted to show was that it is not only in the way aerial technologies are applied and how images produced by them are used, but also playing a significant role is the way in which these images are being received by publics. Through the art historical examples I included in the thesis, I aimed to show that Western traditions of landscape have been for centuries contributing to a system of optics undergirded with colonial attitudes, that prepared viewers to see the world as target. My hope is that this discussion encourages more discourse on how these antiquated and harmful “shortcut” ways of seeing and understanding landscape images can be interrupted. This discussion necessarily invites contemplation as to the roles and responsibilities that institutions such as universities and art museums play in this project.

My first case study, featuring Colin Powell’s presentation of satellite images at the U.N. is set in 2003, two years following 9/11 and the subsequent launch of Bush’s “War on Terror.” This series of events takes place at a significant moment within a technological timeline: Google’s “Image Search” function was launched in July 2001, just prior to the Twin Tower attacks,⁵²⁵ while Google Maps and Google Earth were both launched in 2005. Out of this technoscape social media emerged, with Facebook launching in 2004, YouTube in 2005, and Twitter in 2006. The iPhone, which was introduced to the mass market in 2007, established smartphones as an essential nexus to social media and information platforms. At this moment, notes Eyal Weizman, “important things began to happen at the intersection of satellite images and videos.”⁵²⁶ These intersections, as I endeavour to show throughout the thesis, are inhabited and activated by aerial viewpoints. My project rose out of this charged nexus, where I noticed that despite the many aerial images invading visual culture, the captioning or interpretations describing them often seemed to focus on the effect of aerial perspectives rather than the features of landscape they made visible.

Other important things began to emerge out of these intersections, as visual investigations and open-source investigative techniques were developed in response to the frisson of the images and perspectives. Forensic Architecture was founded by Weizman in 2010, Bellingcat in 2014 by Elliot Higgins, while the New York Times Visual Investigations Team formed in 2017. My investigation of aerial perspectives, which took shape in proposal form in 2015, coalesced in real-

⁵²⁵ According to Google, the development of this function, which the company terms a “product” has a pop-culture inspiration, citing the 2000 Grammy Awards, the year that Jennifer Lopes wore her famous green dress, which at that time could not be shown in Search. Notably, Google’s timeline of information is accompanied by a long-zoom function as images change along with the facts distributed. To show the aerial awareness of urban design, the Staples Center where the Grammys took place in 2000, is shown from above, to reveal an enormous “Staples” logo spanning its rooftop. “Twenty years of Google,” <https://earth.google.com/web/@34.04327756,-118.26644211,91.52240459a,173.69627877d,35y,255.55789107h,67.07299208t,0r/data=CjASLhIgODA4NTU5MTdhYTY5MTFlODhiNmY4NzJhOWI4M2NhODgiCmdjc19saXN0XzU>

⁵²⁶ Eyal Weizman, “In Conversation with Shumon Basar,” Zoom Discussion hosted by Ireland Architectural Foundation, Sept. 9, 2021.

time alongside the development of these research groups. This immediacy permitted me an exciting opportunity to observe the development of methodologies in the formation of counter-narrative by groups such as Forensic Architecture. In the thesis I endeavoured to show the importance of these research groups in reappropriating aerial perspectives and rejecting the notion that these viewpoints should be the sole possession of state and corporate power.

Aerial perspectives are and will continue to be about power, and the thesis provides many examples and iterations of this paradigm, but these perspectives can also be about resistance. What I have striven to show is that aerial domination is not exclusively effectuated through the dropping of bombs, it is also manifested through more subtle or “invisible” articulations such as who has control over airspace and signals, and who has access to technologies, orbit, and public platforms. I do not position domination and resistance at polar points, which is to say that I do not conceptualize control as an exclusively aerial concept, with resistance resigned to humble roots on the ground. Resistance is found through interrupting the vertical hegemonies that have been naturalized across systems of culture, economy, and government. To resist is to put the ground in conversation with atmospheric fields, and to understand the relationality of above and below – in this regard, the thesis can be considered a many-chaptered conversation.

What I have sought to emphasize in the project, with my focus on the importance of counter-narratives is that aerial perspectives and the images produced via these viewpoints have as much to do with voice as they do with eyes. Satellite technologies may permit people (or certain people) a wider access to see more things in the world from “new” angles, but these images and the events they capture are often interpreted by an omniscient voice that is never specifically named. As Powell reiterated in front of the U.N. Council (and the televised world), satellite images were “difficult” and required “expert eyes”; statements like this went far in undermining

individuals' confidence and agency in understanding these images. This helped generate a dependency on "authorities" to give the images meaning, which by extension produces a dominant worldview. Often these authorities are agents of the state, who offer homogenized readings inflected with archetypal or simplified tropes. One mandate of the thesis is to show that a necessary part of looking at aerial images involves knowing what to look for. Once a person knows what to look *for*, they have more of a chance of understanding what they are looking *at*. In describing the complex networks and environments that contribute to or even design ambiguity or invisibility, I hope that the thesis will encourage some confidence in engaging with aerial images. I wish to make clear that the lack of understanding associated with these images is not necessarily a cognitive one, but a prescribed one.

As I progressed through the study, and became more adept at identifying features of the world from above, I realized that the indistinct shapes on aerial images were not resolving themselves, but in a sense, I was. As I came to understand the power structures that articulated aerial technologies, the "bigger picture" came into focus -- things were not hidden or ambiguated by technological "glitches," they were often *being* hidden or ambiguated by systems of power. This is to say that many of the qualities that are typically associated with aerial perspectives such as abstraction or obfuscation are not inherent to these views but may be inserted into them for strategic purposes. For instance, blur in a witness video carries its own signatures of information that contributes to the understanding of an event, and as such becomes a salient feature of the narrative. Following this, throughout the thesis I attempted to reveal that how events are imaged says a lot about the politics and conditions of that event, and the state of the surrounding cultural or natural environment. Architectural indices within ground-level witness videos, for example,

help to establish the context and environment of the scene, while perspective and panning can say much about emotion.

Aerial perspectives, it turns out, are very versatile and mobile points of view – they can be used by and against the state, they can be generated from air space and orbit, while proxies of these views can be created and used in another scale and dimension of space, as in in architectural 3-D modelling software, video games and in ubiquitous internet applications. At home in a variety of dynamic environments, aerial perspectives therefore necessitate interdisciplinary lenses to be comprehensively understood. Applying a geographical lens on top of a media studies lens, over one from art, and one from history, a magnification and resolution manifests that begins to give shape to the power structures which inhabit aerial perspectives, whose registers can be witnessed in landscapes. As information that is specific to a one field is shared with others, cumulatively the analyses compensate for any lacunae that might occur within a more singular discourse grounded in one field. Perhaps more importantly are the distinct modes of enquiry between disciplines that generates the most robust forms of knowledge.⁵²⁷ It is this kind of collaborative sense-making that informs my project and as I interrogate the work of interdisciplinary visual investigations groups.

That many perspectives must be used to understand aerial perspective of landscapes speak to the transdisciplinarity of the topic. “Trans,” according to Aiwah Ong, “denotes both moving through space or across line, as well as changing the nature of something.”⁵²⁸ This prefix signals a concept of mobility as key to the thesis, both in describing the articulations of the various aerial

⁵²⁷ Weizman and Fuller refer to this paradigm or relations between subjects and objects of analysis as an “aesthetic capacity,” which describes the limits of how even ‘immaterial’ or abstract notions can be influenced/affected by others. Such immaterial things are involved and embedded in a language, which will have its particular capacities for expressing, creating, or grasping ideas, and it would also have to pass through a cognitive system of some sort, each stage involving aesthetic translations and reworkings. Fuller and Weizman, *Investigative Aesthetics*,45.

⁵²⁸ Aiwah Ong, *Flexible Citizenship: The Cultural Logistics of Transnationality*, (Durham:, NC; London: Duke University Press)4.

technologies, but also in my methodology of analysis. Peter Adey offers that mobility “is about a displacement of something across, over and through space,” and along with geographic signatures, it also holds various social, cultural, political, and economic ones.⁵²⁹ Adey approaches mobility through a series of propositions, a number of which are important to framework and findings of my thesis: mobility is best understood in a plural sense --as *mobilities*;⁵³⁰ mobilities are relational: they are “positioned in relation to something or someone”;⁵³¹ mobilities are mediations: they “often mediate in the sense that they transport other mobilities or are often transported themselves.”⁵³²

Adey’s conception of mobility supports my own non-essentializing and pluralizing assumptions about landscapes. Adey’s notion of mobility as a mode of mediation also ties in with Lisa Parks’ theory of vertical mediation that forms an active relational space between ground and orbit – a model that proved fundamental to my research. Finally, Adey’s idea that mediation is perhaps the greatest power of mobility in its ability to carry humans and non-humans (here I include the ephemeral, as in ideas, and knowledge) between places provides an effective model for my present study. Here case studies served as arrival and departure points and the routes of enquiry established served as transportation hubs connecting places, people and perspectives.

I see aerial perspectives as a proxy for mobility and I also see them play the role of mediators that Adey identified as paramount. Throughout the thesis I have worked to picture these conceptions. My project set out to show that not only are aerial perspectives linked to violent pasts, but they also carry them forward. Not only are they carrying military histories, but art histories as well. This is to say that while aerial perspectives carry in them vestiges of WWI, the Vietnam War or the bombing of Hiroshima, they also carry with them art historical traditions of Orientalism,

⁵²⁹ Adey, *Mobility*, 13.

⁵³⁰ *Ibid.*, 18.

⁵³¹ *Ibid.*, 17.

⁵³² *Ibid.*, 16.

Romanticism or Futurism. Placing these histories side by side helps to contextualize past, present and future. For example, placing the aerial photographs of Sophie Ristelhueber against a desert painting by Augustus Lamplough, shows the vestiges of 19th-century colonial attitudes seeping into the 20th century. The comparison also reveals how abstraction can be used as a modality to express attitudes about place and is in itself a distancing effect that can be amplified by aerial perspectives. Subsequently placing these next to Colin Powell's infamous satellite images, a more nuanced reading emerges to show that the force of Powell's interpretation was not solely thanks to the so-called objectivity of technology, but that his tropes were fulfilling an orientalist narrative for which an American audience had been primed.

Meanwhile, in reading Trevor Paglen's *Limit Telephotography* series next to Fazal Sheikh's *Desert Bloom*, similarities arise in the precision of their labeling that acknowledges exact place and time. In both projects, desert landscapes appear: in Sheikh's images, the desert is delicately rendered, its surfaces inscribed with lines and stain, while in Paglen's photos the landscape is reduced to blur as he pushes against the boundaries of optics. However, if the aesthetics of the images differs, both projects are speaking to how military power is implicated in the production of landscapes. *Limit Telephotography* carries vestiges of Turner's nineteenth-century paintings whose blurred paintings were testaments to burgeoning industrialization, while also acknowledging the pioneering landscape photographers of the American Southwest. Meanwhile Sheikh's photographs are archeological and give picture to deep time through spatial signatures that show patterns of life. In all these examples, histories are being transported through landscapes and aspects of them are being amplified through aerial technologies.

This conduit function channeling the past into the future, is active in other technologies that we see as future facing, such as AI, which as Ruha Benjamin and Safiya Noble argue are

capable of amplifying racism and sexism. Furthermore, these sociologists offer that these effects are not glitches in the technology, but rather are systemic within them. Drawing from these cautionary analyses, this thesis demonstrates how aerial inequities, such as disparities in resolution in satellite images which make certain parts of the world less clearly imaged (such as Palestine) are also not glitches, but rather a political program of “visual oppression” enforced by the State of Israel. Just as much can be learned about the designers of biased AI, via the tendency of the algorithms, much can be learned by the operators and owners of aerial technologies via the applications they make of them

Another argument that I make is that aerial perspectives and landscape are relational, and as put forth by Lisa Parks, constantly engaged in acts of vertical mediation. Aerial perspectives affect landscapes through representation (and potential production), just as landscapes affect aerial perspectives in encouraging particular technological innovations or applications. In the choice of my case studies, I attempted to shine a light on these relationships and relational affects. Each case study allowed an opportunity to perform investigations of and give picture to notions related to aerial perspectives and landscape, such as scopic regimes, visibility and invisibility, ambiguity, and narrative voice.

Potentially, the most valuable information emerged out of the spaces between these case studies and their investigations. These spaces became filled with generative conversations as events, places, people, and perspectives were understood relationally, a term I favour over “comparatively,” as the former term underpins the model of place-making according to archeologist Christopher Tilley that I found helpful to describe the moving methodologies of my research project. Tilley writes, “places are read and experienced in relation to others”; both of

which situate movement as a part of the interconnection of experience.”⁵³³ He continues, “A centred and meaningful space involves specific sets of linkages between the physical space of the non-humanly created world, somatic states of the body, the mental state of cognition and representation and the space of movement, encounter and interaction between persons and between persons and the non-human environment.”⁵³⁴ Timothy Clack observes, “Landscape is produced by movement [both physical and cerebral] that connects social relations and practice but also other places [...] As the individual can move, so can the landscape.”⁵³⁵ Through acknowledging the historical linkages of aerial views, this study aimed to use them as a lens and a modality of mobility to make connection between geographies, disciplines, cultures, and temporal periods. In the twenty-first century, visual culture moves in a kind of accelerated digital flow; this dynamism requires that images be recognized as active agents that need be understood spatially and relationally.

Just as visual culture is never stationary or at rest, neither are landscapes. Landscapes, as Barbara Bender offers, are always in “process of being shaped and reshaped. Being of the moment and in process, they are always temporal. They are not a record, but a recording and this recording is much more than a reflection of human agency and action; it is *creative* of them.”⁵³⁶ Bender’s conceptualization of landscape as an active and creative set of forces echoes Stoler’s approach to ruin as “ruination” as a set of processes imbued with a specific intents and goals. Weizman’s ability to read ruination became paramount in the investigations of Forensic Architecture, and in one sense describes the sets of exercises I performed over the course of the thesis.

⁵³³ Christopher Tilley, *A Phenomenology of Landscape*, 10.

⁵³⁴ Ibid.

⁵³⁵ Timothy Clack, “Thinking Through Memoryscapes,” 118.

⁵³⁶ Barbara Bender, “Time and Landscape,” *Current Anthropology*, (Vol.43, Supplement, August-October, 2002) 103.

In choosing to study aerial perspectives of landscape, I don't think I was quite prepared for the extent of the destruction and violence I was about to witness. Through repeated exposure to these aerial images featuring the aftermath of war or the evidence of climate change, aerial views started to become synonymous with destruction. In my research, I encountered only rare instances where these aerial images felt static and suggested an arrested state of ruin and framed the destruction as iconic or archetypal. More often, these were pictures of ruination that suggested a landscape in the throes of processes, which reflects Mitchell's primary stance on landscape which he saw as a verb rather than noun. I therefore agree with Bender, Stoler and Weizman for the need to describe processes, intents, and accountability.

Future Directions

The telescoping articulation of the long-zoom function, which originally made aerial views salient for me, could also be used to describe my movement through my program of research. I started somewhere at a distance from the topic of aerial views and as I moved in, different aspects came into formation; as I "arrive" the resolution corrupts and answers break apart into more questions. The long-zoom also describes a telescoping of interest from geospatial technologies in orbit to algorithmic functions deep inside machines, with the satellite as ostensibly visible and as knowable as the algorithm. These are just two examples of "tools" that were and continue to be promoted as objective or neutral (despite more insistent challenges to the contrary). However, as has been argued throughout the thesis, technology is not neutral, nor are landscapes as represented through any of its sensing modalities.

Following this, I believe that an area that invites more exploration in the context of aerial landscape imagery, is the algorithmic articulations that control which images are made salient in digital visual culture (i.e., on the Internet). This becomes an increasingly high stakes arrangement

as landscape imagery has become the primary evidence of natural and manmade destructive processes (with the two becoming harder to parse), and so become of interest to regimes and corporations who wish to advance agendas through strategies of invisibility. If algorithms do not allow particular images to be salient, and all social media platforms have this ability to curate and control information, the stories attached to these images may go unacknowledged. As has been discussed in the thesis, landscapes are prone to “politics of resolution,” which make certain areas (such as Palestine) less crisply rendered in satellite images. This thesis has opened up new possible lines of enquiry, by questioning the algorithmic control that determines which landscape images are being made salient or visible.

Figures



Fig. 1) The Security Council looks at a video screen during U.S. Secretary of State Colin Powell's address to the UN Security Council February 5, 2003 in New York City.



Fig. 2) Satellite images presented by Colin Powell at Feb. 5, 2003, U.N. hearing.



Fig.3) Smoke rising from an explosion during the first few minutes of massive air attack on Baghdad on March 21, 2003, as part of the “shock and awe” campaign by the U.S. military. (*Al Jazeera*)

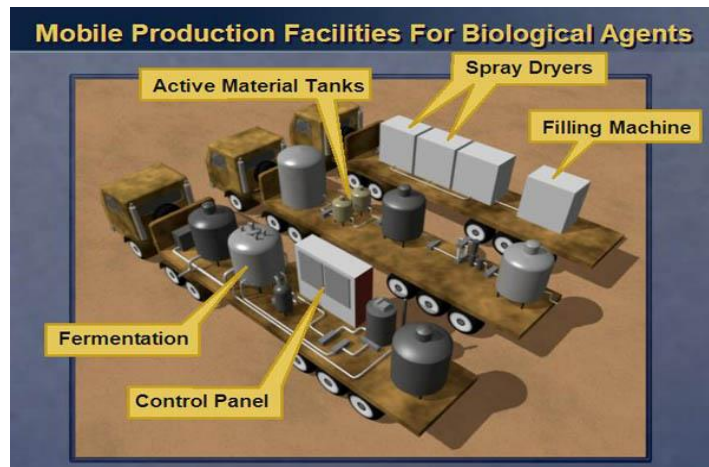


Fig.4) Colin Powell's UN presentation slide showing alleged mobile production facility for biological weapons.



Fig. 5) Lieutenant SC Thynne demonstrates the use of a hand-held camera in the Back seat of a Nieuport aircraft. Example of an A-type camera used during WWI. (UK National Archives)



Fig.6) An observer of the Royal Flying Corps in a Royal Aircraft Factory B.E.2c reconnaissance aircraft demonstrates a C type aerial reconnaissance camera fixed to the side of the fuselage, 1916. (UK National Archives)



Fig.7) Joachim Patinir, *Landscape with Charon Crossing the Styx* (c. 1515-1524)



Fig. 8) Caspar David Friedrich, *Wanderer Above a Sea of Fog* (c.1818)

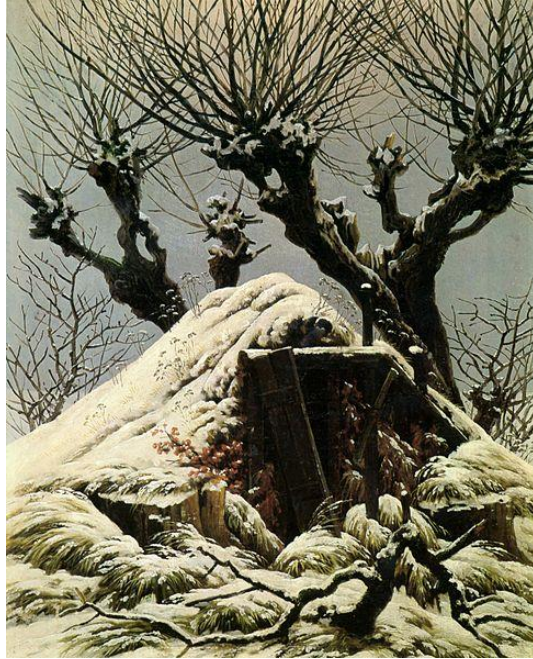


Fig. 9) Caspar David Friedrich, *Hut in the Snow* (c. 1827)



Fig. 10) Pieter Bruegel the Elder, *Landscape with the Fall of Icarus* (1588)



Fig. 11) Trevor Paglen, “Highway of Death (Corpus: The Aftermath of the First Smart War)” *Adversarially Evolved Hallucination*, 2017. © Trevor Paglen / Metro Pictures



Fig.12) Hito Steyerl, *SocialSim*, 2020. © VG Bild-Kunst, Bonn, 2020Film still © Hito Steyerl



Fig. 13) Laura Kurgan, *Conflict Urbanism: Aleppo* (detail), 2015. (BOMB Magazine)

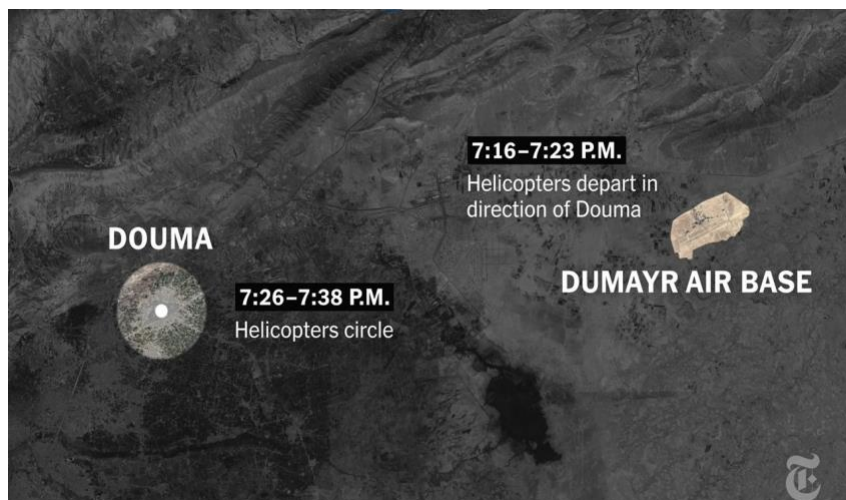


Fig.14) Satellite image obtained by the *New York Times* that show that the Dumayr Air Base, used as a staging ground for the Syrian Army, in relation to the city of Douma on April 7, 2018. (*New York Times*)



Fig. 15) Film still from video taken onsite of the gas canister or “barrel bomb” as found on the roof of the building in Douma in which 34 people were found dead on April 7, 2018. (Bellingcat)

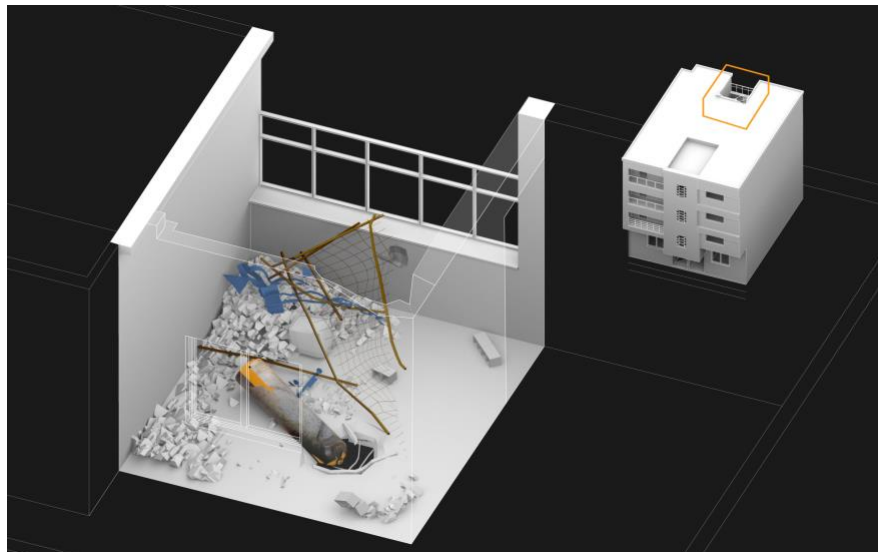


Fig.16) Virtual modeling of the scene by Forensic Architecture that highlights four key pieces of evidence: 1) Indentation of the canister near the nose; 2) Black corrosion on the canister indicating the presence of chlorine; 3) Lattice imprint on the bomb; 4) Bomb’s rigging found in the debris. In the background, upper right is a situational model that shows the relative location of the bomb strike, which landed on a top-floor balcony of the building. (*New York Times*)

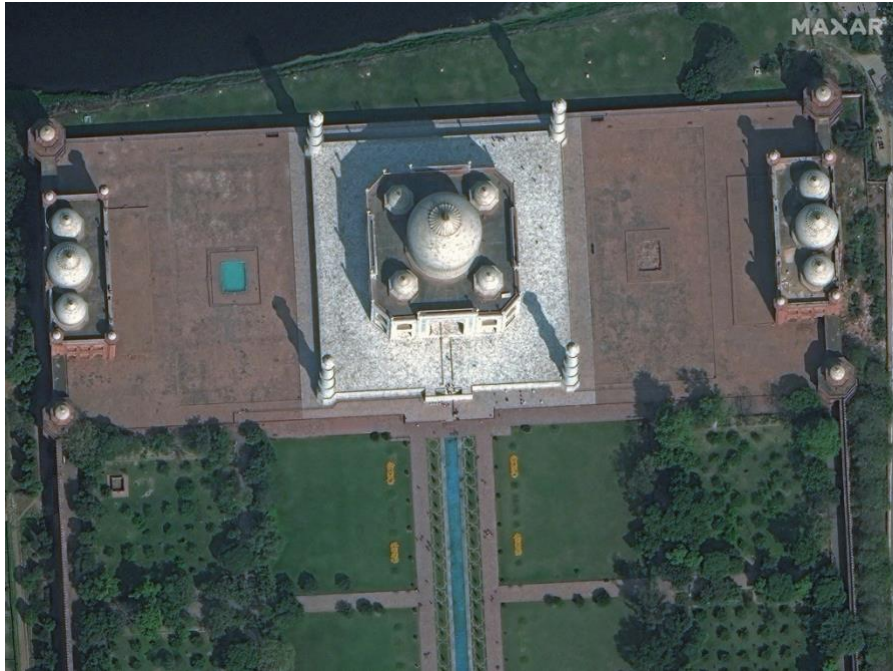


Fig.17) Example of a vertical aerial photograph (Maxar Technologies)



Fig.18) Example of an oblique aerial photograph. (c. 1938) (Historic Environment Scotland)



Fig 19) Installation view of *Fait* (Galerie Jerome Poggi).



Fig.20) Sophie Ristelhueber, "Plate 61" from the series *Fait*, 1992 Chromogenic c-print, 39 3/8 x 51 1/8"



Fig.21) Sophie Ristelhueber, “Plate 67” from the series *Fait*, 1992 Chromogenic c-print, 39 $\frac{3}{8}$ x 51 $\frac{1}{8}$ ”



Fig.22) Sophie Ristelhueber, “Plate 29” from the series *Fait* (1992). Chromogenic c-print, 39 $\frac{3}{8}$ x 51 $\frac{1}{8}$ ”

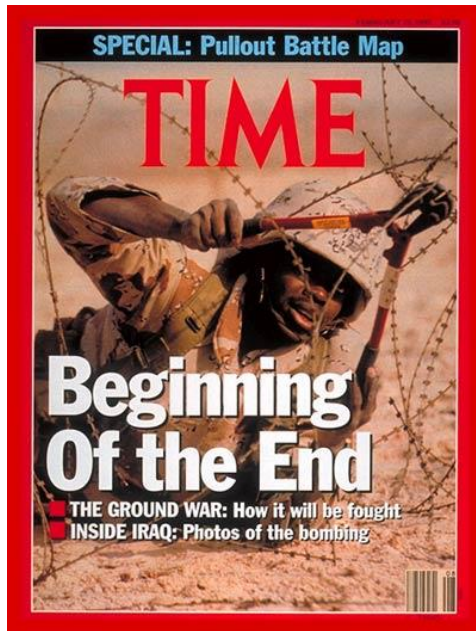


Fig.23) Cover of the issue of Time Magazine (February 25, 1991).



Fig.24) Gustave Guillaumet, *The Desert (or The Sahara)* (1867) (Wikimedia Commons)



Fig. 25) Caspar David Friedrich, *Monk by the Sea* (ca 1810)



Fig. 26) Augustus Osborne Lamplough, *Man Riding a Camel in the Desert During a Sand Storm* (1860) (Art UK)



Fig.27) Edward Burtynsky, *Nickel Tailings #39*, Sudbury, Ontario (1996) (Edward Burtynsky web)

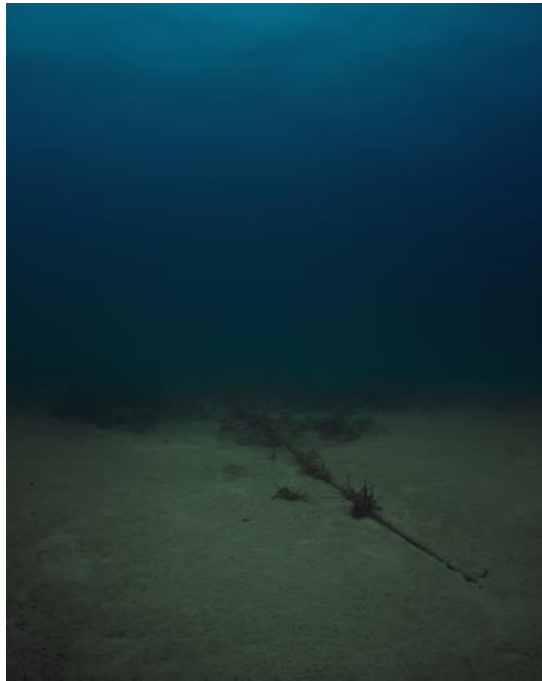


Fig.28) Trevor Paglen, *Bahamas Internet Cable System (BICS-1)*
NSA/GCHQ-Tapped Undersea Cable
Atlantic Ocean, 2015, C-print, 60 x 48". (Metro Pictures)



Fig. 29) Trevor Paglen, *NSA-Tapped Fiber Optic Cable Landing Site, Mastic Beach, New York, United States*, 2014, C-print, 121.9 x 152.4 cm, two parts (Metro Pictures)



Fig.30) Timothy O'Sullivan, "Black Cañon, From Camp 8, Looking Above," 1871
Albumen silver print from glass negative; 20 x 28.1 cm (7 7/8 x 11 1/16 in.)
(Met Musuem)

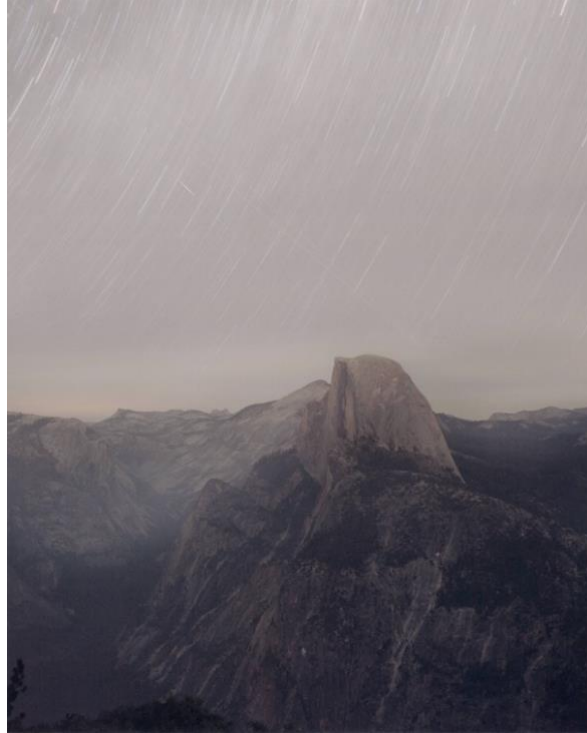


Fig.31) Trevor Paglen, *Keyhole Improved Crystal from Glacier Point (Optical Reconnaissance Satellite USA 186)* (2008) (Metro Pictures)



Fig.32) Promotional photo for Creech AFB featuring an MQ-9 Reaper, titled *A Desert Sunset over Creech AFB*. (U.S. Air Force Photo taken by Staff Sgt. Lauren Silverthorne)



Fig.33) Trevor Paglen, *Open Hanger; Cactus Flats, NV; Distance ~ 18 Miles; 10:04 A.M.* (2007) (Metro Pictures)

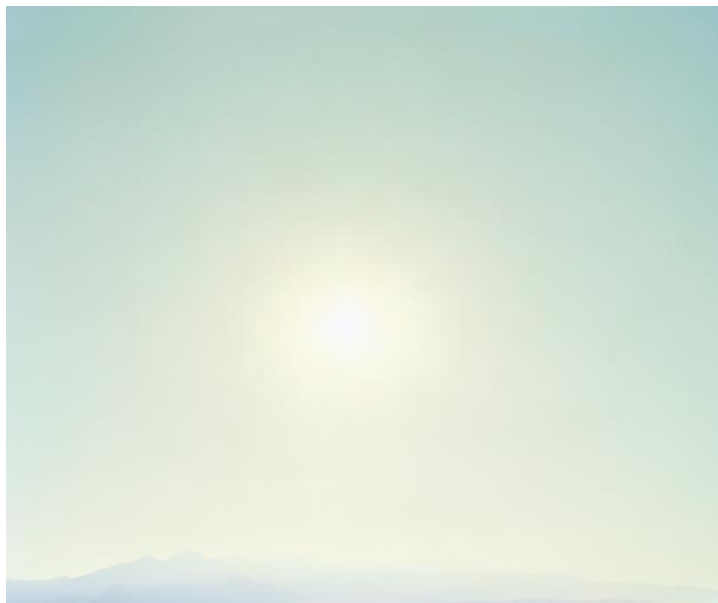


Fig. 34) Trevor Paglen, *Reaper in the Sun* (2013) (Metro Pictures)



Fig.35) JMW Turner, *The Angel Standing in the Sun* (1846)



Fig.36) Trevor Paglen, Film Still from *Drone Vision* (2010) (Trevor Paglen)



Fig.37) Trevor Paglen, Film Still from *Drone Vision* (2010) (Trevor Paglen)⁵³⁷

⁵³⁷ I am grateful to Trevor Paglen for granting me access to this artwork.



Captioning accompanying the image reads:

LATITUDE: 31° 1'48" N/ LONGITUDE: 34° 33' 56" E

November 13, 2011. Remains of Rehovot-in-the-Negev/Ruheiba (Heb./Arabic). During the Nabataean era, this was the second largest city along the northeast-- south Nabataean spice route. The importance of the settlement was due to its location in the center of the Halutza-Nitzana-Sinai trade route. In the fifth century, during the Byzantine era, the city's population was over 10,000. The city is now located on sand dunes close to the Egyptian border and encircled by close military live-fire training zone, operative during weekdays. At bottom left is the main access route into the town which leads to the reconstructed central square. From the ground, these are the only visible remains. The rest of the city appears like a set of haphazard topographical wrinkles. From the air, at the end of the summer, the city becomes visible under a seemingly transparent layer of earth.⁵³⁸

Fig. 38) Fazal Sheikh, *Desert Bloom* (No. 3) and accompanying from *The Erasures Trilogy* (2011) Ink jet print. 40x 60cm. Series of 48 ink jet prints, 2011. Image courtesy of the artist.⁵³⁹

⁵³⁸ Tel Aviv Museum of Art, Fazal Sheikh, monograph as part of the group exhibition *This Place*. I thank Fazal Sheikh for forwarding me digital proofs for the publication, from which this text has been extracted.

⁵³⁹ I am grateful to Fazal Sheikh for supplying me high-resolution digital images for *Desert Bloom* (No.1) and (No.3).

9 • LATITUDE: 30°53'60"N / LONGITUDE: 34°45'53"E

October 9, 2011. Demolished remains of a Bedouin home and fenced area within the Ministry of Agriculture and Rural Development experimental site, started in around 2000 and currently still active. The house, which is made of light and fragile material, is typical of Bedouin structures, and the evidence on the ground suggests that



the house was voluntarily evacuated and demolished without a struggle. The land was confiscated so as not to impede the work of the experimentation. In the upper left corner of the image are two circular dark patches, the remains of staining from the herd that was kept within a corral on the site (see 4). The two white circles right of the fencing are the remains of wells along a channel that has been dug from the streambed.

Fig. 39) Fazal Sheikh, *Desert Bloom*, (No. 9). Source: Tel Aviv Museum of Art, "Fazal Sheikh," supporting documenting as part of the exhibition, *This Place*.)

18 • LATITUDE: 31°0'60"N / LONGITUDE: 34°43'4"E

October 9, 2011. Abu Asa family homestead in the vicinity of the recognized Bedouin town of Bīr Haddāj, of the 'Azāzme tribe. The dark circular stains in the center of the image indicate the former presence of *sire*, livestock pens for camels, goats, and sheep. Staining is created by the bodily fluids of the herds that were kept there.



Each year, the pens are shifted and the former space disinfected by fire. The stains remain on the ground for several years, the gradient of their saturation indicating how many rainy seasons have washed them away. Such traces help gauge the minimum duration of their presence in years. In 1978 Bīr Haddāj was declared a closed military area, forcing its inhabitants to relocate to Wādi al-Na'im, near Beersheba. In 1994, when they learned that land on which they had previously settled was no longer used for military purposes, but had been converted into a moshav, they returned and settled beside the moshav.

Fig.40) Fazal Sheikh, *Desert Bloom*, (No.18.) (Source: Tel Aviv Museum of Art, "Fazal Sheikh," supporting documenting as part of the exhibition, *This Place*.)



Fig.41) Chocolate Hills of Bohol Philippines in opening scene of *Come to Me, Paradise* (2016). Film still.



Fig. 42) Stephanie Comilang. *Come to Me, Paradise* (2016) Film Still.



Fig.43) Stephanie Comilang. *Come to Me, Paradise* (2016). Film still featuring “Central” the weekly gathering place of migrant domestic workers in Hong Kong.



Fig.44) Stephanie Comilang, *Come to Me, Paradise* (2016) Film still.

Bibliography

- Adams, Ann Jensen. "Communities in the 'Great Bog of Europe: Identity and Seventeenth-Century Dutch Landscape Painting," *Landscape and Power*. Ed. W.J.T. Mitchell, Chicago: University of Chicago Press; 2nd ed., 2002: 35-76.
- Adey, Peter. *Aerial Life: Spaces, Mobility, Affects*. Oxford: Wiley-Blackwell, 2010.
- Aikins, Matthieu and Alissa J. Rubin, "First Tied to ISIS, Then to U.S.: Family in Drone Strike is Tarnished Twice." *New York Times*, September 18, 2021.
- Allen, Amy. "Foucault on Power: A Theory for Feminists." In (Eds) Susan J. Hekman. *Feminist Interpretations of Michel Foucault*. University Park: Penn State University Press, 1996.
- Allen, Amy. *The Politics of Our Selves. Power, Autonomy and Gender in Contemporary Critical Theory*. New York: Columbia University Press, 2013.
- Alpers, Svetlana. *The Art of Describing : Dutch Art in the Seventeenth Century*. Chicago: University of Chicago Press, 1983.
- Amad, Paula. "From God's-Eye to Camera-Eye: Aerial Photography's Post-Humanist and Neo-Humanist Visions of the World." *History of Photography* (36:1, 2012), 66- 86.
- Barrell, John. *The Dark Side of Landscape: The Rural Poor in English Painting 1730-1840*. Cambridge: Cambridge University Press, 1983.
- Barthes, Roland. *Image, Music, Text*. London: Fontana Press, 1977.
- Barthes, Roland. *Camera Lucida: Reflections on Photography*. Trans. Richard Howard. New York: Hill and Wang, 1982.
- Bellingcat "Syria Archives." Last Accessed Sept. 20 , 2021
<https://www.bellingcat.com/page/1/?s=syria>
- Bellingcat. "Douma Leaks Part 3: We Need to Talk about a False Flag Attack," January 23, 2020. <https://www.bellingcat.com/news/mena/2020/01/23/the-opcw-douma-leaks-part-3-we-need-to-talk-about-a-false-flag-attack/>
- Bender, Barbara. "Subverting the Western Gaze: Mapping Alternative Worlds." *The Archaeology and Anthropology of Landscape*, Eds. P. Ucko and R. Layton, London: Routledge 1999.
- Bender, Barbara. "Time and Landscape." *Current Anthropology* (Vol.43, Supplement, August-October, 2002), 103-112.

- Benjamin, Ruha. *Race After Technology: Abolitionist Tools for the New Jim Code*. Cambridge; Boston:Polity Press, 2019.
- Benjamin, Walter. "A Short History of Photography," *Screen*, Vol. 13 Issue 1, Spring 1972):5-26.
- Bergman, Christian, "The Forensics of Human Rights - An Interview with Eyal Weizman." interview by, *Hafiza Merkezi Berlin*, March 7, 2021. https://www.hm-berlin.org/forensicsofhumanrights_eyalweizman/
- Biagetti, Stefano and Jasper Morgan Chalcraft, "Imagining Aridity: Human Environment Interactions in the Acacus Mountains, Southwest Libya." *Imagining Landscape*. Eds. Monica Janowski and Tim Ingold: 77-96.
- Bier, David J. and Mathew Feeney. "Drones on the Border: Efficacy and Privacy Implications." *Immigration: Research and Policy Breach*, No. 5, May 1, 2018.
- Boersma, Maren. "Filipina Domestic Workers in Hong Kong: Between Permanence and Temporariness in Everyday Life," *Current Sociology Monograph*, Vol 67(2): 272-292.
- Bousquet, Antoine. *The Eye of War: Military Perception from the Telescope to the Drone*. Minneapolis: University of Minnesota Press, 2018.
- Brenner, Frédéric. *This Place*. Accessed Aug.27, 2021. <http://www.this-place.org/>
- Browne, Malachy et al. "One Building One Bomb: How Assad Gassed His Own People." *New York Times*, June 25, 2018. <https://www.nytimes.com/interactive/2018/06/25/world/middleeast/syria-chemical-attack-douma.html>.
- Brotton, Jeremy. *A History of the World in Twelve Maps*. London:Penguin, 2012.
- Brusati, Celeste A. "Perspectives in Flux: Viewing Dutch Art in Real Time." *Art History* (Vol. 35 No.5, 2012), 908-933.
- Bryan-Wilson, Julia "Trevor Paglen at the Limit" in *Trevor Paglen*, Eds. Lauren Cornell, Julia Bryan-Wilson, Omar Kholeif, (London:Phaidon, 2018), 40.
- Burtynsky, Edward. Artist's Website. Last accessed Oct. 10, 2021. <https://www.edwardburtynsky.com/projects/photographs/tailings>
- Cammaer, Gerda. "Edward Burtynsky's Manufactured Landscapes: The Ethics and Aesthetics of Creating Moving and Stilling Moving Images of Ecological Disasters." *Environmental Communication: A Journal of Nature and Culture* No.1 (1):121-130.]

- Caquard, Sébastien. "Cartography I: Mapping Narrative Cartography." *Progress in Human Geography* (37 (1), 2011), 135-144.
- Constable, Nicole. "Tales of Two Cities, Legislating Pregnancy and Marriage Among Foreign Domestic Workers in Singapore and Hong Kong." *Journal of Ethnic and Migration Studies*, 46 (3): 1-17.
- Chamayou, Grégoire. *A Theory of the Drone*. New York; London: The New Press, 2013.
- Chasin, Noah. "Laura Kurgan by Noah Chasin." *BOMB Magazine*. Dec. 15, 2016, <https://bombmagazine.org/articles/laura-kurgan/>
- Chow, Rey. *The Age of the World Target: Self-Referentiality in War, Theory, and Comparative Work*. Durham, NC and London: Duke University Press, 2006.
- Christou, William. "10 years on, Syrian Activists Remain Resolute," *The New Arab*, March 15, 2021. <https://english.alaraby.co.uk/english/indepth/2021/3/15/10-years-on-syrian-activists-remain-resolute>
- Clack, Timothy. "Thinking Through Memoryscapes: Symbolic Environmental Potency on Mount Kilimanjaro, Tanzania." *Thinking Through the Environment: Green Approaches to Global History*, Ed. Timo Myllyntus: 115-134.
- Clark-Ibáñez, Marisol. "Framing the Social World with Photo-Elicitation Interviews," *American Behavioral Scientist*, (08 Vol. 47; Issue, 12, 2004), 1507-1527.
- Collier, John and Malcolm Collier, *Visual Anthropology: Photography as a Research Method*. Albuquerque: University of New Mexico, 1986.
- Constable, Nicole. *Maid to Order in Hong Kong: Stories of Filipina Workers*, Ithaca, NY: Cornell University Press, 1997.
- Cosgrove, Dennis. *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination*, (Baltimore: John Hopkins University Press), 2001.
- Costelloe, Timothy. *The Sublime: From Antiquity to Present*. Cambridge: Cambridge University Press, 2012.
- "Costs of War." Brown University, Watson Institute: International & Public Affairs. Last Accessed Sept. 28, 2021. [https://watson.brown.edu/costsofwar/costs/human/refugees/iraqi#:~:text=As%20of%202020%2C%209.2%20million,first%20to%20escape%20the%20war.=](https://watson.brown.edu/costsofwar/costs/human/refugees/iraqi#:~:text=As%20of%202020%2C%209.2%20million,first%20to%20escape%20the%20war.)
- Council on Foreign Relations. "Global Conflict Tracker." Last accessed Sept. 28, 2021. <https://www.cfr.org/global-conflict-tracker/conflict/civil-war-syria>

- Creates, Marlene. quoted in Joan M. Schwartz's preface to the book, "Constituting Place of Presence: Landscape, Identity and the Geographical Imagination, in Marlene Creates, *Places of Presence: Newfoundland Kin and Ancestral Land, Newfoundland*, 1989-91 (St. John's: Killick Press, 1977), 1-18.
- Curtis, James C. "Documentary Photographs as Texts." *American Quarterly*, 40, 2 (June 1988): 246-252.
- Davenport, Coral et al. "Greenland is Melting Away." *New York Times*. Oct. 26, 2015.
<https://www.nytimes.com/interactive/2015/10/27/world/greenland-is-melting-away.html>
- "Decade After Iraq WMD Speech at UN, Ex-Powell Aide Lawrence Wilkerson Debates Author Norman Solomon." *Democracy Now*, Feb. 6, 2013.
<https://www.youtube.com/watch?v=iDnMopHZWzI>
- Deighton, Len. *Bomber*. London: Pan Books, 1970.
- Demos, T.J. *Decolonizing Nature: Contemporary Art and the Politics of Ecology*. Berlin: Sternberg Press, 2016, 8.
- "Department of Defense Dictionary of Military and Associated Terms." April 12, 2010,
https://irp.fas.org/doddir/dod/jp1_02-april2010.pdf
- DePrang, Emily. "Baghdad Bob and His Ridiculous True Predictions." *The Atlantic*. March 31, 2013.
- Di Giovanni, Janine. "Inside Syria's Propaganda Wars." *Newsweek*. Dec. 24, 2016.
<https://www.newsweek.com/syria-propaganda-aleppo-assad-536003>
- Donnan, Hastings and Kirk Simpson, "Silence and Violence among Northern Ireland Border Protestants," *Ethnos*, 72, 1 (March 2007): 5-28.
- Dorrian, Mark. "On Google Earth." *Seeing From Above: The Aerial View in Visual Culture*. Eds. Mark Corrian and Frédéric Pousin. New York; London: I.B. Tauris, 2013, 290 -308.
- Duffy, Mignon. "Reproducing Labour Inequalities: Challenges for Feminists Conceptualizing Care at the Intersections of Gender, Race, and Class." *Gender & Society*, 19 (1) 2005, 66-82.
- Evans, Jessica and Stuart Hall. *Visual Culture: The Reader*. Thousand Oaks: SAGE Publications, 1999.
- Feigenbaum, Anna. "From Cyborg Feminism to Drone Feminism : Remembering Women's Anti-Nuclear Activisms." *Feminist Theory* 16 (3): 265 -288.
- Feldman, Allen. "Violence and Vision: The Prosthetics and Aesthetics of Terror," *Public Culture*, (10 (1), 1997), 24-60.

- Filkins, Dexter. *The Forever War*. New York: Alfred K. Knopf, 2008.
- Fleischer, Ari, @AriFleischer, Tweet, March 22, 2019.
- Forensic Architecture “Triple Chaser.” *Forensic Architecture*. May 13, 2015.
<https://forensic-architecture.org/investigation/triple-chaser>
- Forensic Architecture. “A Lesson in Counter Forensics: Interpretation.” Seminar series at Tate Britain with Laura Kurgan. April 5, 2019, <https://vimeo.com/328655041>
- Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. New York: Vintage, Second Ed., 1995.
- Francisco-Manchavez, Valerie. “Skype Mothers and Facebook Children.” in *Labor of Care*. Chicago: University of Illinois Press, 2018.
- Freund, Alexander and Alistair Thompson. Eds. *Oral History and Photography*. New York: Palgrave MacMillan, 2011.
- Fuchs, Rudolph. *Dutch Art*. London: Thames and Hudson, 1978.
- “Full Text of Colin Powell’s Speech. *The Guardian*. Feb. 5, 2003.
<https://www.theguardian.com/world/2003/feb/05/iraq.usa>
- Fuller Matthew and Eyal Weizman. *Investigative Aesthetics: Conflicts and Commons in the Politics of Truth*. London; New York: Verso Books, 2021.
- Grant-Brook, William and Verity Hubbard, “The Impact of Explosive Weapons on Children in Syria,” Oct. 16, 2020, <https://reliefweb.int/report/syrian-arab-republic/impact-explosive-weapons-children-syria>
- “Geolocation: Displaying User or Device Positions on Maps.” *Google Maps Platform*, accessed Aug. 26, 2021.
<https://developers.google.com/maps/documentation/javascript/geolocation#:~:text=Geolocation%20refers%20to%20the%20identification,is%20a%20device%2Dspecific%20API.>
- Gersdorf, Catrin. *The Poetics and Politics of the Desert: Landscape and the Construction of America*. Amsterdam: Rodopi, 2009.
- Godard Space Flight Center.” *NASA*. Accessed August 26, 20121.
<https://www.nasa.gov/centers/goddard/news/releases/2011/11-027.html>
- Gough, Paul. “Calculating the Future: Panoramic Sketching, Reconnaissance Drawing and the

- Material Trace of War.” In N. Saunders & P. Cornish (Eds.) *Contested Objects: Material Memories of the Great War*. London: Routledge, 2009, 237-251.
- Grayson, Kyle and Jocelyn Mawdsley. “Scopic Regimes and the Visual Turn in International Relations: Seeing World Politics Through the Drone.” *European Journal of International Relations*, (Vol 25, Issue 2, 2019) 431-457.
- Gregory, Derek. “The Everywhere War.” *The Geographical Journal*, Vol. 177, No. 3, September 2011: 238–250.
- Gregory, Derek. “Lines of Descent.” *From Above: War, Violence, and Verticality*. Eds. Peter Adey, Mark Whitehead, and Alison J. Williams. Oxford University Press, 2013, 41-70.
- Gregory, Derek. “Dirty Dancing.” In *Life in the Age of Drone Warfare*. Eds. Lisa Parks and Caren Kaplan. Life in the Age of Drone Warfare. Durnham: Duke University Press, 2017, 25-58.
- Gregory, Derek. “From a View to a Kill: Drones and Late Modern War,” *Theory, Culture and Society*. SAGE Los Angeles New Delhi London and Singapore Vol. 28 7-8 (2018): 188-218.
- Gynnild, Astrid. “Visual Journalism,” *The International Encyclopedia of Journalism*. (Eds.) Tim P. Vos and Folker Hanusch, John Wiley & Sons, 2019.
- Hanna, Sara. “Scale and Aerial Photography: GSP216: Introduction to Remote Sensing.” Last Accessed Aug. 2, 2021. Humboldt State University. http://gsp.Humboldt.edu/OLM/Courses/GSP_216_Online/lesson2-2/scale.html.
- Hannity and Colmes Segment of Fox News in “Decade After Iraq WMD Speech at UN, Ex-Powell Aide Lawrence Wilkerson Debates Author Norman Solomon.” *Democracy Now*, Feb. 6, 2013. <https://www.youtube.com/watch?v=iDnMopHZWzI>
- Harries, Karsten. *Infinity and Perspective*. Chicago: University of Chicago Press, 2001.
- Haraway, Donna. “Situated Knowledges: The Science Question in Feminism and The Privilege of Partial Perspective,” in *Feminist Studies* Vol.14, No. 3 (Autumn 1988):575-599.
- Haraway, Donna. *Simians, Cyborgs and Women: The Reinvention of Nature*. London: Routledge, 1991.
- Heffernan, Michael J. “The Desert in French Orientalist Painting During the Nineteenth Century.” *Landscape Research* 16 (2), 1991: 37-48.
- Hern, Alex. “Twitter Apologizes for “Racist” Image Cropping Algorithm. *The Guardian*. Sept. 21, 2020. <https://www.theguardian.com/technology/2020/sep/21/twitter-apologises-for-racist-image-cropping-algorithm>

- “High Resolution Satellite Imagery Ordering and Analysis Handbook,” American Association for the Advancement of Science. <https://www.aaas.org/resources/high-resolution-satellite-imagery-ordering-and-analysis-handbook>
- High, Steven. “Mapping Memories of Displacement,” in Eds. Alexander Freund and Alistair Thomson. *The Oral History Reader*. New York: Palgrave MacMillan, 2011.
- “History of Creech Airforce Base,” *Creech Air Force Base*, May 16, 2013. <https://www.creech.af.mil/About-Us/Fact-Sheets/Display/Article/449127/history-of-creech-air-force-base/>
- Hong Kong Immigration Department, Importation of Labour: Foreign Domestic Helpers (FDHs) Last accessed Sept. 25, 2021. www.labour.gov.hk/eng/plan/iwFDH.htm
- “How the Times Makes Visual Investigations.” *New York Times*. Live Stream discussion Feb. 14, 2020. <https://www.youtube.com/watch?v=reTUxfQsSUQ>
- Iadarola, Alexander. “Lumapit Sa Akin, Paraiso (Come to Me, Paradise).” *dis magazine*, last accessed Sept. 25, 2021. http://dismagazine.com/discussion/82626/lumapit-sa-akin-paraiso-come-to-me-paradise/?utm_source=pocket_mylist
- “Inside Raqqa, The Capital of ISIS.” *The New York Times*. Nov. 21, 2015. <https://www.nytimes.com/interactive/2015/11/21/world/middleeast/inside-raqqa-capital-of-isis.html>
- Jay, Martin. *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*. Berkeley: University of California Press, 1994.
- Jay, Martin. “Scopic Regimes of Modernity.” *Vision and Visuality*. Ed. Hal Foster. New York: Dia Art Foundation, 1988.
- Jay, Martin. “Scopic Regimes of Modernity Revisited.” *Essays from the Edge: Parerga and Paralipomena*. Charlottesville: University of Virginia Press, 2011.
- Johnson, Steven. “The Long Zoom.” *New York Times.com*, 08 Oct. 2006. Last accessed 03 Oct, 2021. <https://www.nytimes.com/2006/10/08/magazine/08games.html>
- Mannik, Lynda. “Remembering, Forgetting, and Feeling with Photographs.” *Oral History and Photography*. Eds. Alexander Freund and Alistair Thomson. New York: Palgrave MacMillan, 2011: 77-96.
- Mirzeoff, Nicholas. *Watching Babylon: The War in Iraq and Global Visual Culture*. New York: Routledge, 2005.
- Mirzeoff, Nicholas. *How to See the World*. New York: Pelican, 2015.

Moore, Shannon. "An Interview with Sobey Art Award Winner Stephanie Comilang." *National Gallery of Canada Magazine*, January 29, 2020.

<https://www.gallery.ca/magazine/artists/sobey-art-award/an-interview-with-stephanie-comilang-2019-sobey-art-award-winner>

"Joachim Patinir," Museo del Prado, accessed Aug. 26, 2021.

<https://www.museodelprado.es/en/the-collection/artist/patinir-joachim/f29b6144-6e38-42f4-95b4-a7f948a5039a>

Kaplan, Caren. "Precision Targets: GPS and the Militarization of U.S. Consumer Identity." *American Quarterly* 58, no. 3 (2006):693-713.

Kaplan, Caren. "The Space of Ambiguity: Sophie Ristelhueber's Aerial Perspective." in *Geohumanities: Art, History, Text at the Edge of Place*, Eds. Michael Dear et al., London: Routledge, 2011, pp. 154- 162.

Kaplan, Caren. "The Balloon Prospect, Aerostatic Observation and the Emergence of Militarised Aeromobility." In *From Above: War, Violence, and Verticality*, Eds. Peter Adey, Mark Whitehead, Alison J. Williams. New York: Oxford, 2013.

Kaplan Caren and Lisa Parks (Eds). *Life in the Age of Drone Warfare*. Durnham: Duke University Press, 2017.

Kaplan, Caren. "Drone-o-rama: Troubling the Spatial and Temporal Logics of Distance Warfare." Eds. Lisa Parks and Caren Kaplan. *Life in the Age of Drone Warfare*. Durnham: Duke University Press, 2017.

Keenan, Thomas. "Counter-Forensics and Photography." *Grey Room* No. 55, Allan Sekula and the Traffic in Photographs (Spring 2014): 58-77.

Ketchum, Jim. "Laura Kurgan, September 11, and the Art of Critical Geography." In *Geohumanities: Art, History, Text, at the Edge of Place*. (Ed.) Michael Dear et al. London: Routledge, 2011.

Ketchum, Jim. "Visual Geographies: Geoimagery." *GeoHumanities: Art, History, Text at the Edge of Place*. London and New York: Routledge, 2011, 139-142.

Khoo, Olivia. "Drone Feminism: Technology, Surveillance and Entanglement in Laura Poitras." *Astro Noise. Feminist Media Studies* (21:3), 398-408.

Koerner, Leo Joseph. *Caspar David Friedrich and the Subject of Landscape*. New Haven: Yale University Press, 1990.

Kurgan, Laura. *Close Up at a Distance*. New York: Zone Books, 2013.

- Laura Kurgan and Eyal Weizman. "Counter Forensics: Interpretation, A seminar series at Tate Britain with Laura Kurgan," 2018. <https://vimeo.com/328655041>
- "Laura Kurgan," GSAPP Columbia University. <https://www.arch.columbia.edu/faculty/195-laura-kurgan>
- Langford, Martha. *Suspended Conversations: The Afterlife of Memory in Photographic Albums*. Kingston, ON: McGill-Queens University Press, 2001.
- Langford, Martha. "Speaking the Album: An Application of the Oral Photographic Framework," in *Locating Memory: Photographic Acts*, Ed. Annette Kuhn and Kirsten Emiko McAllister (Oxford: Berghan Books, 2006), 224.
- Lewis, Paul. "Fiction is Outperforming Reality: How YouTube's Algorithm Distorts Truth." *The Guardian*, Feb.2, 2018. <https://www.theguardian.com/technology/2018/feb/02/howyoutubes-algorithm-distorts-truth>
- Litfin, Karen T. "The Gendered Eye in the Sky: A Feminist Perspective on Earth Observation Satellites." *Frontiers: A Journal of Women's Studies* 18(2) (1997), 26-47.
- Luria, Sarah. "Spatial Literacies: Geotexts," in (Eds. Michael Dear et al.) *GeoHumanities: Art, History, Text at the Edge of Place*. London and New York: Routledge, 2011, 67-70.
- Luria, Sarah. "The Art and Science of Literary Geography." *American Literary History*, Vol. 24, No.1. Sustainability in America, (Spring 2012):189-204.
- Maddox, J.D. "The Day I Realized I Would Never Find Weapons of Mass Destruction in Iraq." *New York Times*, Jan. 29, 2020. <https://www.nytimes.com/2020/01/29/magazine/iraq-weapons-mass-destruction.html>
- Massey, Doreen. "Places and Their Pasts." *History Workshop Journal*. No. 39 (Spring, 1995): 182-192.
- Mayer, Marc. *Sophie Ristelhueber: Fait*. Ed. Sophie Ristelhueber. New York: Errata Editions, 2008.n.p.
- McKelvey, Tara. "Media Coverage of the Drone Program." *Joan Shorenstein Center on the Press, Politics and Public Policy*, February 2013.
- "Measuring Vegetation (NDVI and EVI)," NASA: Earth Observatory. Last Accessed Oct. 11, 2021. https://earthobservatory.nasa.gov/features/MeasuringVegetation/measuring_vegetation_2.php
- Mégret, Frédéric. "War and the Vanishing Battlefield." *Loyola University Chicago International*

- Law Review* 9, No. 1, 2012.
- Metz, Cade. "Feeding Hate with Video: A Former Alt-Right YouTuber Explains His Methods." *The New York Times*, April 4, 2015, <https://www.nytimes.com/2021/04/15/technology/alt-right-youtube-algorithm.html>
- Metz, Christian. "The Imaginary Signifier." *Screen* Vol. 16 Issue 2, (1975):14-76.
- "Military Installations: Creech AFB: In-Depth Overview" U.S. Department of Defense. <https://installations.militaryonesource.mil/in-depth-overview/creech-afb>
- Mirzoeff, Nicholas. *Watching Babylon: The war in Iraq and global visual culture*. New York, NY: Routledge, 2005.
- Mirzoeff, Nicholas. *How to See the World*. New York: Pelican, 2015.
- Mitchell, W.J.T. *Landscape and Power*. Chicago: University of Chicago Press; 2nd ed., 2002.
- Mitchell, W.J.T. *Cloning Terror: The War of Images, 9/11 To the Present*. Chicago: University of Chicago Press, 2011.
- Marie Muracciole and Benjamin J. Young. "Editors' Introduction: Allan Sekula and the Traffic in Photographs." *Grey Room* 55 (Spring 2014): 6-15.
- Musée d'Orsay. "Gustave Guillaumet. *The Sahara*. Accessed Aug. 27, 2021. <https://www.musee-orsay.fr/fr/oeuvres/le-sahara-9121>
- New York Times, "How the Times Makes Visual Investigations." Streamed live on Feb. 14, 2020, <https://www.youtube.com/watch?v=reTUxfQsSUQ>
- Nochlin, Linda. "The Imaginary Orient." in *Art in America*, May 1983: 119. -191
- Oksala, Johanna. "Microphysics of Power," in (Eds.) Lisa Disch and Mary Hawkesworth. *The Oxford Handbook of Feminist Theory*. Oxford University Press, 2016: 472-489.
- Olttermann, Philip. "Berlin's No. 1 Detective Agency is on the Heels of Human Rights Abusers." *The Guardian*, June 27, 2021, last accessed August 24, 2021. <https://www.theguardian.com/law/2021/jun/27/berlins-no-1-digital-detective-agency-is-on-the-trail-of-human-rights-abusers>
- Ong, Aiwah. *Flexible Citizenship: The Cultural Logistics of Transnationality*. Durham:NC; London: Duke University Press, 1999.
- Panjwani, Aly and Lea Kayali. "The White Supremacist Agenda of the War on Terror." *Qalam, Medium*, Jan. 25, 2021.

- Paglen, Trevor. *Blank Spots on the Map: The Dark Geography of the Pentagon's Secret World*. New York: Berkley 2010.
- Paglen, Trevor. "Experimental Geography: An Interview with Trevor Paglen," in (Eds.) Michael Dear et al. *GeoHumanities: Art, History, Text at the Edge of Place*. London and New York: Routledge, 2011, 19-25.
- Paglen, Trevor. "Photographing Secret Sites and Satellites." Creators, YouTube, Dec.5, 2013 <https://www.youtube.com/watch?v=9IgfU0VwdkQ&t=115s>
- Paglen, Trevor. "Invisible Images of Surveillance." World Economic Forum, April 5, 2018 <https://www.youtube.com/watch?v=ijVTdSoZEC4>
- Paglen, Trevor. "Machine Eyes" in *Trevor Paglen*, Eds. Julia Bryan-Wilson et al. London: Phaidon, 2018.
- Parks, Lisa and James Schwoch. *Down to Earth*, New York: Rutgers University Press, 2012.
- Parks, Lisa. *Rethinking Media Coverage: Vertical Mediation and the War on Terror*. New York: Routledge, 2013.
- Peebles, Jennifer A. "Toxic Sublime: Imaging Contaminated Landscapes." *Environmental Communication: A Journal of Nature and Culture*. 5 (4) Dec., 2011: 373-392.
- Perlson, Hili. "The Most Important Piece at Documenta 14 in Kassel Is Not an Artwork. It's Evidence," *artnet*, June 8, 2017. <https://news.artnet.com/art-world/documenta-14-kassel-forensic-nsu-trial-984701>
- Peters, Ralph. "Our Soldiers, Their Cities," *Parameters*, Spring, 1996: 1-7.
- Rae, Alasdair. @undertheradar, Tweet Oct 13, 2021. <https://twitter.com/undertheradar/status/1448244464305197056>
- Riley, Mark and David Harvey. "Talking geography: on oral history and the practice of geography." *Social and Cultural Geography*, vol. 8, no. 3, June 2007: 1-4.
- Ristelhueber, Sophie. "Documenting Traces of War" *Tate*. Jan.22, 2015. Retrieved from <https://www.youtube.com/watch?v=PBsgm4OBOfE>
- Saïd, Edward. *Orientalism*. New York: Vintage, 1978.
- Scott, James. C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven and London: Yale University Press, 1998.

- “Shock and awe: Quick reference.” *Oxford References*. Accessed Aug. 26, 2021
<https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100502693>
- Simpson, Jon “Find Branding Success in the Digital World.” *Forbes*, Aug. 25, 2017
<https://www.forbes.com/sites/forbesagencycouncil/2017/08/25/finding-brand-success-in-the-digital-world/?sh=1cd72b5d626e>
- Solnit, Rebecca. *The Faraway Nearby*. New York: Viking, 2013,3.
- “Sophie Ristelhueber—Documenting Traces of War.” Tate Shots: Tate Modern.
<https://www.youtube.com/watch?v=PBsgm4OBOfE>
- Pausata, Francesco S.R. et al. “The Greening of the Sahara: Past Changes and Future Implications.” *One Earth*, (Vol.2, Issue 3, 20 March 2020).
- Porter Abbot, H. *The Cambridge Introduction to Narrative*. 2nd ed. Cambridge: Cambridge University Press, 2008.
- Salazar Parreñas, Rhacel. “Migrant Filipina Domestic Workers and the International Division of Reproductive Labor.” *Gender and Society*, Vol. 14, No. 4 (Aug. 2000), 560-580.
- Salazar Parreñas, Rhacel. *The Force of Domesticity: Filipina Migrants and Globalization*. New York: NYU Press, 2008.
- Salazar Parreñas, Rhacel “The Reproductive Labour of Migrant Workers.” *Global Networks* 12, 2 (2012); 269-275.
- Samuels, Jeffery. “Breaking the Ethnographer’s Frames: Reflections on the Use of Photo Elicitation in Understanding Sri Lankan Monastic Culture.” *American Behavioral Scientist*. (Vol. 47, Issue 12, 2004),1528-1549.
- Schama, Simon. *Landscape and memory*. New York: A.A. Knopf, 1995.
- Schwartz, Joan. “Constituting Place of Presence: Landscape, Identity, and the Geographical Imagination.” preface to Marlene Creates, *Places of Presence: Newfoundland Kin and Ancestral Land, Newfoundland 1989-91* (St. John’s: Killick Press, 1997), 1-18.
- Schneider, Tobias.Emma Bapt, Karam Shoumali“Assad’s Long Reach” GPPI, Last accessed Aug. 26, 2021, <https://chemicalweapons.gppi.net/analysis/assads-long-reach-syaaf-pt-1/>
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press, 1998.
- Sebregondi, Francesco in “Tracks: Special Smartphonocène,” *Arte.tv* Aired April 9, 2021
<https://www.arte.tv/fr/videos/102697-000-A/tracks/>

- Segal, Noam. "Prediction in the Era of Digital Stupidity: Hito Steyerl." *Flash Art*. Issue 334, April 26, 2021. <https://flash---art.com/article/hito-steyerl/>
- Sheikh, Shela "The Erasure Trilogy: Interview with Fazal Sheikh," *Slought*, 2016.
- Sekula, Allan. "The Body and the Archive," in *October*, Vol. 39. (Winter,1986): 3-64.
- Simpson, Jon. "Find Branding Success in the Digital World." *Forbes*. Aug. 25, 2017. <https://www.forbes.com/sites/forbesagencycouncil/2017/08/25/finding-brand-success-in-the-digital-world/?sh=1cd72b5d626e>
- Slought Foundation. "A Conversation at the Brooklyn Museum of Art, with Fazal Sheikh and Teju Cole" April 14, 2016. https://slought.org/resources/erasures_al_araqib
- Stauble, Katharine. "Sophie Ristelhueber : Of Fact and Fiction," *National Gallery of Canada Magazine*, Nov. 26, 2015. <https://www.gallery.ca/magazine/exhibitions/of-fact-and-fiction-sophie-ristelhuebers-fait>
- Stahl, Roger. *Militainment Inc: War, Media, and Popular Culture*. New York: Routledge, 2010.
- Steyerl, Hito. "On documenting (truth and politics)." A lecture as part of *Undercurrents*, a series of weekly lectures and conversations within the Concerning War project, BAK, Utrecht (NL) (2005, November 12). Retrieved from <https://vimeo.com/63638712>
- Steyerl, Hito. "In Free Fall: A Thought Experiment on Vertical Perspective." *e-flux Journal* (Issue 24, April 2011). <https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/>
- Steyerl, Hito."Walking through screens: Images in transition." In Carol Squiers (Ed.), *What is a photograph?* 70-75). New York: International Center for Photography, 2014: 70-75.
- Steyerl, Hito "In Free fall: A Thought Experiment on Vertical Perspective." *e-flux*, no. 24, 2011.
- Stoler, Ann Laura. "Imperial Debris: Reflections on Ruins and Ruination." *Cultural Anthropology* (Spring 2008): 119-219.
- Strecker, Alexander. "An Urgent Look at How Artificial Intelligence Will See the World," *Lens Culture*, Last accessed Aug. 26, 2021. <https://www.lensculture.com/articles/trevor-paglen-an-urgent-look-at-how-artificial-intelligence-will-see-the-world>
- Taylor, James and Martin Davidson. *Bomber Crew*. London: Hodder & Stoughton, 2004.
- The Creators Project, "Trevor Paglen's Deep Dive Web Dive: Behind the Scenes," August 30, 2016. <https://www.youtube.com/watch?v=h7guR5ei30Y>

- Thomas, Anne. "Metaphors and Imagination: Sophie Ristelhueber's 'WB' Series, National Gallery of Canada, Sept.5, 2019. <https://www.gallery.ca/magazine/your-collection/at-the-ngc/metaphors-and-imagination-sophie-ristelhuebers-wb-series>
- Thompson, Nato. *Experimental Geography: Radical Approaches to Landscape, Cartography, and Urbanism*. New York: Melville House, 2009.
- Tilley, Christopher. *A Phenomenology of Landscape: Places, Paths, and Monuments*. Oxford: Berg, 1994.
- "Trevor Paglen on the Secret History of Early Yosemite Photography." *SF MOMA*, Accessed August 27, 2021, <https://www.sfmoma.org/watch/trevor-paglen-on-the-secret-history-of-early-yosemite-photography/>
- Trower, Shelley. *Place, Writing and Voice in Oral History*. New York: Palgrave MacMillan, 2011.
- Ullman, Harlan K. and James P. Wade. "Shock and Awe: Achieving Rapid Dominance." National Defence University, 1996.
- UNESCO and Equal Skills Coalition, I'd Blush If I Could: Closing Gender Divides in Digital Skills Through Education, UNESCO Report, 2019. <https://unesdoc.unesco.org/ark:/48223/pf0000367416.page=1>
- Uppal, Shevta. "Introduction to Aerial Photography." Practical Work in Geography. National Council of Research and Training. Palak Printers, 2019.
- Utoikamanu, Fekitamoela. "Closing the Technology Gap in Least Developed Countries" *United Nations Chronicle*, last accessed Sept. 12, 2021 <https://www.un.org/en/chronicle/article/closing-technology-gap-least-developed-countries>
- Vidal, Gore. *Perpetual War for Perpetual Peace: How We Got to Be So Hated* (New York: Thunder's Mouth Press/Nation Books, 2002).
- Virilio, Paul. *War and Cinema: The Logistics of Perception* (1984). Trans. Patrick Camiller (New York and London: Verso, 1989), 20.
- Virilio, Paul quoted in Derek Gregory, "Gabriel's Map: Cartography and Corpography in Modern War," *Geographies of Knowledge and Power*, Eds. Meuburger et al. (Netherlands: Springer, 2015): 89-121.
- Vosoughi et al., "The Spread of True and False News Online," *Science*, March 9, 2018, last accessed August 24, 2021. <https://science.sciencemag.org/content/359/6380/1146>

Wall Street Journal, "Investigation: How TikTok's Algorithm Figures Out Your Deepest Desires," *Wall Street Journal*, July 21, 2021, <https://www.wsj.com/video/series/inside-tiktoks-highly-secretive-algorithm/investigation-how-tiktok-algorithm-figures-out-your-deepest-desires/6C0C2040-FF25-4827-8528-2BD6612E3796?mod=e2tw&twclid=11420770482870177795>

Warf, Barney. "Dethroning the View from Above" in *Down to Earth*. New York: Rutgers University Press, 2012.

Weizman, Eyal. *Forensic Architecture: Violence at the Threshold of Detectability*. New York: Zone, 2017.

Weizman, Eyal. "Ground Truth: Colonization of Climate Change." Lecture at Sonic Acts Festival: The Noise of Being, Amsterdam February 26, 2017. <https://www.youtube.com/watch?v=omivukSotb4>

Weizman, Eyal. "Tracks: Special Smartphonocène," *Arte.tv* Aired April 9, 2021 <https://www.arte.tv/fr/videos/102697-000-A/tracks/>

Weizman, "The Forensics of Human Rights," July 4, 2021. https://www.hm-berlin.org/forensicsofhumanrights_eyalweizman/

Weizman, Eyal. "In Conversation with Shumon Basar." Zoom lectures as part of New:Now:Next Lecture Series hosted by Ireland Architectural Foundation, Sept. 10, 2021

White Helmets. @ SyriaCivilDefTweet, Feb. 25, 2021. <https://twitter.com/SyriaCivilDef/status/1364900175781761027>

Wood, Christopher. *Albrecht Aldorfer and the Origins of Landscape*. Chicago: University of Chicago Press, 1993.

Yates, Frances A. *The Art of Memory*. London: Pimlico, 1996.

Zarobell, John. *Empire of Landscape*. University Park: Penn State University Press, 2010.