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Drone Warfare

Visual Primacy as a Weapon

Lila Lee-Morrison

Abstract

This paper articulates the role of visual primacy in drone warfare through an analysis of a recent ill-fated operation and a study into its developing technologies. In analyzing a drone operation, the first part moves through a discussion of the intervening role of the camera as described by Walter Benjamin as well as aspects of visual reproduction that depart from the mechanical to the digital realm of realtime video, referencing the theory of Paul Virilio. The second part focuses on some developing technologies within drone warfare particularly, the Gorgon Stare and the Mind's Eye programs. These programs highlight specific transformations in modes of perception brought about by drone warfare, such as an industrialization of vision and automated vision. These aspects are increasingly leading tactics in war as seen in the use of so-called, signature strikes. In studying the empirical evidence of drone technology and its trajectory of reorganizing and defining the scope of military space as well as the target, it reveals how a visual primacy is impacting actual space.

Introduction

‘The fundamental event of modernity is the conquest of the world as picture...Within this, man fights for the position in which he can be that being who gives to every being the measure and draws up its guidelines.’¹

‘Put simply: the gods or God used to look upon us and we had a perception that they he [sic] watched us; now we look at the world and we understand

¹ M. Heidegger, ‘The Age of the World Picture’, in J. Young and K. Haynes (trans and ed.), *Off the Beaten Track* (UK: Cambridge University Press, 2002), p. 71.

the world as that which we can see.’²

Drone aircraft has become a dominant weapon in the realm of contemporary warfare. Their existence is the result of the melding of digital reproduction technologies of our era with a weapon of war. Its use has brought about a radicalized shift in the modes of perception by replacing physical engagement on the battlefield with its image. The image produced through drone warfare has reorganized military space by reconstructing the site of engagement through the scope of its lens and the pace of its capture. This article is a brief study into the processes of a networked form of visibility behind drone operations and the progression of its developing visual technology. The processes behind drone operations are indicative of a cultural shift in negotiating, participating and engaging in reality through the filter of its image. In its role through drone warfare, the image no longer functions as a representation but rather a construction of the site of engagement. Contemporary drone technology can be understood through the context of its proliferation in the ‘War on Terror’ and a post 9/11 geopolitical landscape. Its use is seen as an inevitable and sufficient answer to the contemporary challenges of the battlefield, where simply locating the enemy is one of its most difficult tasks. In a Heideggerian notion, drone warfare exists as a prime weapon of the modern age, with its expanding global scope, having militarily transformed ‘the world as picture.’ As the battlefield is reconstructed through its image in drone warfare, so is the target. The ability to delineate and launch attacks on a target through their visual capture, has transformed the scope and processes of warfare. The treatment of the target, when defined through a visual presentation exposes a radicalized function of the image to supercede actual space, specifically the erasure of distinguishing between military and civilian targets. Drone warfare splits contemporary conflicts between those who contend

² G. Sauer-Thompson, ‘philosophical conversations, Heidegger: world as picture’, *thought-factory.net*, 24 November 2004, [online] Available at: (<http://sauer-thompson.com/conversations/archives/002569.html>) [Accessed 13 January 2013].

with reality through the filter of a reproduction and those who are targeted and having to contend with the physical realities on the ground. Drone warfare has created an asymmetrical advantage on the modern battlefield, based on a visual primacy.

Theorist Paul Virilio has described the transformation of the function of the image as, ‘no longer of lighting or dispelling darkness, but rather of *dispelling the obstacle of extension*, the immensity of a given territory.’³ (italics in original) The military industrial complex, being in the business of speed, efficiency and dominance, fully utilizes this radicalized function of the image to engage in war. The mobility and physical presence of combatants in war has historically had to contend with the topographical realities, of territorial infrastructure, mountainous borders and the geopolitical boundaries of autonomous states. In contrast, drone warfare circumvents these ground obstructions through airspace and replaces a mobilization of ground troops to the battlefield with an immediacy, in the arrival of its image. This shift from contending with real space is expressed by the overwhelming invasion of autonomous airspace by drone aircraft, also known as Unmanned Aerial Vehicles (UAV). Military space organized through the scope of the camera is no longer primarily constrained to national borders. Without the physical presence of troops, drone aircraft intervene in territories of national states, which their operators are not officially at war with. This circumvention of physical boundaries by UAVs is an expression of drone warfare reorganizing and expanding military space.

Military terminology utilizes the term the ‘theatre of war’ or more recently, ‘in-theatre’⁴ to refer to those that are on the battlefield, in active combat. The use of this term has its literary foundations in describing the visual landscape of modern wars, and has thus been appropriated by those who participate in war, with

³ P. Virilio, *Polar Inertia* (London: Sage Publications, 2000), p. 32.

⁴ D. S. Cloud, ‘U.S. military treats many soldiers’ wounds ‘in theater’, *Los Angeles Times*, 24 October 2010, [online] Available at: (<http://articles.latimes.com/2010/oct/24/world/la-fg-soldiering-on-20101024>) [Accessed 14 January 2013].

its preoccupation with death (one's own and one's active participation in the death of others) as an existence separate from reality. 'Seeing warfare as theater provides a psychic escape for the participant: with a sufficient sense of theater, he can perform his duties without implicating his 'real' self and without impairing his innermost conviction that the world is still a rational place.'⁵ As war is progressively fought from a distance, war as theatre has reached an age of digital reproduction. With its corresponding extended networks, this form of visuality has created an industrialized mode of perception, operating as warfare. Further developments such as automated vision are playing a larger role in leading tactics by determining terrorist activity. The electro-optical environment through which the combatant increasingly engages, is taking supremacy over physical space. The battlefield and the target have become embedded in this digital theatre of war, from which the combatant participates from the position of an observer, at a distance. In analyzing the empirical evidence of an actual drone operation and the developing technology of drone warfare, this article provides a critical analysis on the relationships of a visual organization of warfare and the transformation of modes of perception.

A Drone Operation: The Afghan Tragedy and (Re)Production of Meaning

A drone operation lead by the US Air Force, became the topic of an article reported on by David S Cloud for the Los Angeles Times, titled 'Anatomy of an Afghan War Tragedy.'⁶ The article follows the process of a drone operation in Afghanistan and how it lead to mistakenly identifying a convoy of civilians as a threat on a U.S military unit. The events began when a Predator drone was

⁵ P. Fussell, *The Great War and Modern Memory* (New York: Oxford University Press, 1975), p. 192.

⁶ D. S. Cloud, 'Anatomy of an Afghan war tragedy', *Los Angeles Times*, 10 April 2011 [online] Available at: (<http://articles.latimes.com/2011/apr/10/world/la-fg-afghanistan-drone-20110410>) [Accessed 5 January 2012].

employed to surveil the area around a team of U.S special operatives. The unit had been dropped off near an Afghan town named Khod around three in the morning on orders to search for insurgents and weapons. Within a few hours, a convoy of two SUVs and a pickup truck were spotted and tracked by the Predator's surveillance cameras. Unaware of their proximity to the covert mission of the U.S military unit, the convoy was carrying two-dozen civilians, including shopkeepers, students, and families with children off to visit relatives, and people seeking medical treatment. Yet, their perceived visual proximity on screen to the military unit, created a narrative, which translated the convoy's presence into an immediate target of suspicion. An Army officer involved with the incident states, 'We all had it in our head, 'Hey why do you have 20 military age males at 5a.m collecting each other?''⁷

The narrative of the image quickly became divorced from its original context on the ground. In his seminal text, 'The Work of Art in the Age of Mechanical Reproduction', the philosopher Walter Benjamin, reflects on an initial confrontation with the processes and role of mechanical reproduction through the technological advances of photography and film. He describes the reproduction as meeting 'the beholder halfway'⁸ and in this process becoming 'independent'⁹ of the original by producing new context and meaning. This production of meaning relies on the enhancements and framing of the lens of the camera, and its ability to create new spatial dimensions and structural formations altering our perception of the original.¹⁰ Benjamin states, 'the camera intervenes, with the resources of its lowerings and liftings, its interruptions and isolations, its extensions and accelerations, its enlargements and reductions...introducing us to unconscious

⁷ Cloud, *Anatomy of an Afghan war tragedy*, 2.

⁸ W. Benjamin, *Illuminations* (New York: Schocken Books, 2nd ed., 2007), p. 221.

⁹ Benjamin, *Illuminations*, 220.

¹⁰ Benjamin, *Illuminations*, 237.

optics, as does psychoanalysis to unconscious impulses.¹¹ Benjamin's reference to 'unconscious impulses' connects to the advances made in psychoanalysis of his era. In the context of warfare the 'unconscious', can describe the role the image plays in revealing covert motivations of those tracked on screen. The ability to bring into focus an unconscious penetrated space of possible threat, in order to result in preemptive action, extends the site of military terrain that was previously visually and physically inaccessible, previous to the camera's intervention. These sites perceived within the scopic regime, substitutes the space that is consciously explored. In the case of the Afghan Tragedy, this transformed the objective existence of the convoy to become defined by its relationship to being observed.

Those observing the events and piloting the Predator drone were stationed at a Ground Control System (GCS) at Creech Air force Base in Nevada. They were linked to the Predator via satellite. The GCS personnel included a two-man team of the drone's pilot and camera operator, as well as an additional mission intelligence coordinator, and a safety observer. Simultaneously, at a separate location, at Hurlburt Field, a U.S. Air Force installation located in Okaloosa County, Florida, a team of screeners, analyzed the live video feed in a room filled with high definition monitors. The screeners consisted of military personnel as well as private contractors hired to supplement the team as visual analysts. The screeners function as part of what in military terms is known as the kill chain. Their observations lead to the final decision on whether or not to launch an attack. The visual analysis made by the screeners at Hurlburt Field was instant messaged to the military personnel at Creech Air force Base. The team's goal was to positively identify a weapon on the convoy in order to deem it necessary to launch an attack. Conversation clips of instant messaging between the Predator's crew and the screeners reveal an aesthetic reliance and attraction to build deadly context out of the unfolding events.

'See if you can zoom in on that guy...is that a...rifle?'

'I was hoping we could make a rifle out.'

¹¹ Benjamin, *Illuminations*, 237.

*'That truck would make a beautiful target.'*¹²

War in Realtime

Although, all eyes watching the video monitors had not yet positively identified a weapon or resolved the possible sighting of children, a potentiality of threat was established through the growing anticipation of the drone crew watching events unfold in realtime. The quality of realtime embedded in the video image further transforms the function of the image into a reconstruction of the original. In Virilio's term of 'videoscropy'¹³ he describes realtime video as 'not a more or less up-to-the-minute 'representation' of an event, but a *live presentation of a place*...an electro-optical environment.'¹⁴ This electro-optical environment is constituted of an 'instantaneous, interactive 'space-time,' that Virilio argues, 'has nothing in common with the topographical space of geographical or even geometrical distance.'¹⁵ The realtime video image thereby presents not only recreated structural formations through the lens, but is also coupled with a reconstructed sense of time. This provides for a temporal unity at the exclusion of physical engagement. In this, temporality acts as a conduit for engagement at the expense of physical presence. Action is experienced then, through a sense of immediacy in the presentation of the electro optical environment. Virilio describes realtime as a corruption of time. 'The three tenses of decisive action; past, present, and future have been surreptitiously replaced by two tenses, *real time* and *delayed time*. This so-called 'real' time...simultaneously contains both a bit of the *present* and a bit of the *immediate future*.'¹⁶ The role of this constructed time plays heavily in the outcome of events in drone warfare, where anticipation of a threat can

¹² Cloud, *Anatomy of an Afghan war tragedy*, 2.

¹³ Virilio, *Polar Inertia*, 1-2.

¹⁴ Virilio, *Polar Inertia*, 1-2.

¹⁵ Virilio, *Polar Inertia*, 2.

¹⁶ Virilio, *Polar Inertia*, 66.

quickly commit events to a false narrative. The collapse of the tenses of decisive action is replaced with a sense of responsive immediacy in the military control room. The result of which is a decision making process directed by the pace of its capture. Speed, in the arena of war clearly translates into dominance. The coupling of video production with weaponry is due to the speed by which digital video can capture and display images of the battlefield through satellite communications. The instant arrival of images creates an asymmetrical advantage of speed over those who must contend with mobilizing bodies, intelligence and ground weaponry through geographical territory. In drone warfare, the immaterial arrival of images of the battlefield through a constellation of satellites directly replaces the physical mobility of the combatant. The presence of an ‘immediate future,’ commits the image to its role within the network, that is to reveal an anticipated threat. In the case of the Afghan Tragedy, although positive identification of weapons were never made, the personnel of the drone became aligned in agreement, from their perceptual standpoint, that a threat would appear clear in the ‘immediate future.’

A Drone Wreck

Based on the visual analysis from the drone, an attack was ordered by army commanders on the convoy near Khod. Two Kiowa helicopters were ordered to get into position to attack. The convoy was seen moving away from the team of U.S operatives. The three vehicles, who at one point were within three miles of the unit, had changed direction and were now 12 miles away. This divergent movement was overlooked and became enveloped into the narrative of a threat. It was explained by the drone crew as ‘the convoy...probably trying to flank’¹⁷ the military unit. The Predator provided backup in the ensuing launch of an attack. They were in position to target any survivors who tried to flee. The pilot negotiated the attack with the camera operator, whose job it was to place the camera cross hairs on insurgents, so that the pilot could fire the missile. As the

¹⁷ Cloud, *Anatomy of an Afghan war tragedy*, 3.

drone crew and screeners observed the launch of attack, a contrasting narrative began to reveal itself.

'The thing is, nobody ran,' one crewmember said.

'Yeah, that was weird,' another replied.

'What are those?' asked the camera operator.

'Women and children,' the Predator's mission intelligence coordinator answered.

As they surveyed the carnage, seeing other children, the Predator crew tried to reassure themselves that they could not have known.

'No way to tell, man,' the safety observer said.

'No way to tell from here,' the camera operator added.

*'Since the engagement,' he said, 'we have not been able to PID [positively identify] any weapons.'*¹⁸

The distance, which made it possible to comprehend an anticipated threat, also became the position from which the screeners and drone personnel could be held unaccountable. The Afghan Tragedy is an example of what happens when a drone operation goes wrong, when it does not succeed in all the technological achievements drone warfare is known for, such as surgical precision and avoiding loss of life. It is an example of drone technology becoming victim to its own creation. The results of the Afghan Tragedy have allowed an opening into an investigation of the communications networks and visual technologies that are behind drone operations. As much as the technology of drone surveillance depends on vision, the unfolding processes of this operation exposed a form of blindness. Officers in the Pentagon have stated a lesson drawn from the incident; 'An abundance of surveillance information can lead to misplaced confidence in the ability to tell friend from foe.'¹⁹

The very capability of visualizing events in realtime of the battlefield created a form of overdependence on the image, while creating a contextual

¹⁸ Cloud, *Anatomy of an Afghan war tragedy*, 3.

¹⁹ Cloud, *Anatomy of an Afghan war tragedy*, 4.

blindspot, mentally and visually for any events happening outside of the scope of the camera. The unforeseen side effects of technological progress have been described by Virilio, when he states, ‘The invention of the ship was also the invention of the shipwreck.’²⁰ This insight provides a metaphorical perspective from which to understand drone technology as inventing a new form of tragedy. Rather than the material destruction of the drone itself, the ‘drone wreck’ involves the collateral damage, resulting from an inherent mode of blindness that occurs within the constraints of a vast network of visual analysis. The gaze is no longer employed by a single entity, but rather allocated to multiple separate components, each of which is not held responsible for the final decisions based on their visual analysis. This network reflects the process of industrializing vision itself, making its mode of perception the structure of the kill chain of contemporary warfare.

Gorgon Stare & Expanding the Scope

Visual networks behind drone operations are expanding, as well as the scope of its capture. Drone technology is developing through a widening of the scope, in order to gain a broader situational context surrounding events. The scope of the lens used on a Predator drone is known as a ‘soda straw capture.’ The name describes the singular lens perspective through which the drone crew and screeners observe events, as if staring down a soda straw. A program in development by the research arm of the U.S military, Defense Advanced Research Projects Agency (DARPA) to expand the visual scope on a UAV, is called the Gorgon Stare. Previously known as Wide Area Airborne Surveillance (WAAS), the Gorgon Stare is described as a revolutionary intelligence, surveillance and reconnaissance (ISR) technology, making its combat debut in December 2010, flying over undisclosed locations in Afghanistan on board an MQ-9 Reaper.²¹ The name is a reference to

²⁰ P. Virilio, *Politics of the Very Worst* (New York: Semiotext(e), 1999), p. 89.

²¹ Global Security, ‘Gorgon Stare’, *Global Security.org*, 28 July 2011 [online] Available at: (<http://www.globalsecurity.org/intell/systems/gorgon-stare.htm>) [Accessed 14 April 2012].

the Greek myth of the Gorgon sisters, reflecting the power of the gaze of the gods. Their stares inflicted death through transforming the subject into stone. Appropriating the gods' gaze, the Gorgon Stare program, with the dynamic of its wide scope video capture, transforms events, places and people, into a uniform, reflective surface of the monitor screen, not unlike stone. The trajectory of its expanding scope is not limited to sites of warfare, but rather extend to function as a realtime video map of global proportions. The development of the Gorgon Stare involves attaching multiple sensors on a single UAV. This expands its surveillance capabilities to capture multiple realtime presentations of topographical regions, particularly of high population density, that of cities. Each individual video stream is pieced together to create a mosaic of images that present a wide area. As stated by an Air Force's assistant deputy chief of staff for intelligence, surveillance and reconnaissance, 'Gorgon Stare will be looking at a whole city, so there will be no way for the adversary to know what we're looking at, and we can see everything.'²² Yet, the scopic technology of the Gorgon Stare makes it so that the multiplication of video feeds sacrifices quality for quantity. The resolution is lowered from a single lens narrow capture once having to stream multiple feeds for a wider scope. Limited bandwidth makes hi res imagery take too long to download to be able to conduct a timely response to events on the ground. As stated by a military official, 'The system was never designed to offer high-resolution imagery.'²³ Thereby, the dominant visual aspect of these technologies is

²² E. Nakashima and C. Whitlock, 'With Air Force's Gorgon Drone 'we can see everything'', *The Washington Post*, 2 January 2011, [online] Available at: (<http://www.washingtonpost.com/wp-dyn/content/article/2011/01/01/AR2011010102690.html>) [Accessed 2 January 2012].

²³ D. Axe and N. Shachtman, 'Our 'All-Seeing Eye' Sees Just Fine, Air Force Insists', *Wired Magazine*, 25 January 2011, [online] Available at: (<http://www.wired.com/dangerroom/2011/01/all-seeing-eye-can-see-just-fine-air-force-insists/>) [Accessed 18 April 2012].

translated through its extension into wider territories on the one hand, yet excluding visible details, such as the identities of individuals within those areas. The Gorgon Stare represents industrialized perception in hyper mode, by which quantity is multiplied at the exclusion of quality. Instead, the widened scope leads to a dissolution of the reflecting surface.

The expansion of the scope of the Gorgon Stare parallels the expansion of the communications network behind its operation. While the Predator drone had required 84 personnel, so far, the Gorgon Stare is reported to require 2,000 personnel to man it.²⁴ This expanding network reflects the growth of the soldier/technician class within the armed forces. Omer Bartov has written on how the industrial revolution transformed and redefined the division of labor and status in war, during the Second World War,

‘the widespread penetration of technology into the armed forces also made for the emergence of soldier/technicians, men of specialized knowledge...without whom no bomber could take off or find its target, no tank could drive or fire. Whereas combat elites might become politically identified and ideologically motivated, non-combatant professionals often assumed a politically indifferent, technocratic attitude, or preferred to focus on their task and ignore its political and/or moral implications.’²⁵

The technocrat has reached a totalizing position in the present culmination of drone warfare, where the distinction between a combatant and non-combatant

²⁴ E. Bumiller and T. Shanker, ‘War Evolves With Drones, Some Tiny as Bugs’,

NYTimes, 19 June 2011, [online] Available at:

(<http://www.nytimes.com/2011/06/20/world/20drones.html?pagewanted=all>) [Accessed 5 July 2013].

²⁵ O. Bartov, *Murder in Our Midst: The Holocaust, Industrial Killing, and Representation* (New York: Oxford University Press, 1996), p. 27-8.

soldier collapse. Today's 'cubicle warrior'²⁶ of the drone operator, is an integral part of the kill chain. This entropy of the gaze transforms the autonomy of the individual to existing as a small component of a larger networked form of visibility to complete the mission at hand. The overarching political and moral implications of drone warfare have yet to be fully understood, yet, reports of the growth of ideologically motivated members of alQaeda in sites of drone warfare have been reported. The anger over civilian or low-level members of terrorist groups, who are locally identified as are members of tribes and communities, being killed by drone has been reported to directly lead to a greater number of recruits by jihadists groups, countering the possible success of missions made by drones in these areas.²⁷

The Mind's Eye: Automated Vision

A major result of the expanding scope of drone warfare is the multiplying troves of data it produces. Top air force officials state with the advent of the Gorgon Stare, 'the future of ISR would be limited only by the human ability to process the information gathered.'²⁸ The demand for visual analysis has exceeded human scale. In this increasing industrialized mode of perception producing massive troves of low res, wide scope captures has lead to the demand of automating the labor of visual analysis. The future of drone proliferation involves

²⁶ P. W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin Press, 2009), p. 336.

²⁷ G. Johnsen, 'Sowing the Wind: Three Years of Strikes in Yemen', *Big Think*, 26 December 2012, [online] Available at: (<http://bigthink.com/waq-al-waq/sowing-the-wind-three-years-of-strikes-in-yemen>) [Accessed 17 June 2013].

²⁸ G. Putrich, 'Gorgon Stare Tests Reveal Long List of Problems' *Flightglobal*, [online] Available at: (<http://www.flightglobal.com/news/articles/gorgon-stare-tests-reveal-long-list-of-problems-352261/>) [Accessed 17 April 2012].

not only the further development of vision machines and their corresponding networks, but also machines that have the ability to envision.

The Mind's Eye project is a 5-year research project, run by DARPA to develop artificial cognitive and visual intelligence. Just as the mechanical lever replaced the capabilities of the human arm in industry, the algorithm being developed in the Mind's Eye project, is meant to extend what is understood to be the human limitations of vision. As Steve Lohr states in the article, 'Computers That See You and Keep Watch Over You,' 'machines do not blink or forget.'²⁹ Algorithms are being developed to program visual intelligence through codifying the perceptive ability of identifying and recognizing an object and then tracking the object to eventually develop reasoning about its movements and interactions. The imperative of the Mind's Eye program is to track what is termed as the 'verbs,' of an observed scene. The use of the terms 'noun' and 'verb' refer to the application of syntax on visual surveillance, transforming visibility into a language, which can be more easily recognizable by both human and machine perception. The increased production of data, together with the lowering of resolution and the development of an automated vision has lead to an increased reliance on visual pattern recognition to be able to sift through the mass of data and distill signifiers of terrorist activity. The ground-air interface provides a flattened presentation of territory, transforming the site of engagement into a planar geographical canvas. Wide area surveillance is analyzed to track movement across this canvas. Algorithmic visual intelligence is defined by an ability to recognize visual patterns that would signify a threat. The use of visual pattern recognition is primarily a tool of statistical analysis applied to vision. Through profiling visual patterns that are presented by terrorist activity, future outcomes are predicted based on the profile. Recognition by an algorithm commits those observed, to a predetermined narrative set by the operative logic within the

²⁹ S. Lohr, 'Computers That See You and Keep Watch Over You,' *NYTimes*, 1 January 2011, [online] Available at: (<http://www.nytimes.com/2011/01/02/science/02see.html?pagewanted=all>) [Accessed 6 April 2012].

system. The image functions not only as a live presentation, but to produce a form of visibility, operational in defining the enemy. This defining of an enemy through their visual presentation is indicative of a visual primacy, where the image takes precedence over all other physically present notions in identifying those observed. As Virilio has stated, 'thus every surface, however tiny or huge, now has objective existence only in and through its relationship to observation, to the viewpoint of one observer or another.'³⁰ In the military use of realtime video, this relative perceptual reliance has the fatal consequences of collateral damage. Defining terrorist activity solely through its visual presentation obscures the recognition of the identities of those targeted and with it, erases a determination of their legal rights of protection, that is, a protection to life. This form of visual primacy has a direct affect of superceding the space of physical reality. Targeted killing through drone campaigns is shifting further away from a requirement to identify the individual identity of a target, and instead targeting groups based on their visual imprint. This shift is expressed directly through the tactic of signature strikes in Yemen.

Signature Strikes and the Supremacy of the Image

According to the CIA, Yemen has emerged as a region with 'the most pressing terrorism threat to the United States.'³¹ It has become a base of operation for members of alQaeda in the Arabian Peninsula, and is tied to the local insurgency attempting to overthrow the Yemeni government. Southern Yemen, the site of major drone activity, envelops a vast rugged mountainous terrain, difficult to access. The situation in Yemen has been understood as requiring a surgical

³⁰ Virilio, *Polar Inertia*, 34.

³¹ G. Miller, 'CIA seeks new authority to expand Yemen drone campaign', *The Washington Post*, 19 April 2012, [online] Available at: (http://www.washingtonpost.com/world/national-security/cia-seeks-new-authority-to-expand-yemen-drone-campaign/2012/04/18/gIQAsaumRT_story.html) [Accessed 19 April 2012].

sense of precision to distinguish between killing local insurgents instead of those threatening the U.S, to avoid being drawn into a civil war. Both of these aspects, the inaccessible terrain and the avoidance of the U.S to declare an official war, make Yemen a prime site to employ drone warfare. An article in The Washington Post, states ‘The CIA is seeking authority to expand its covert drone campaign in Yemen by launching strikes against terrorism suspects even when it does not know the identities of those who could be killed. Securing permission...would allow the agency to hit targets based solely on intelligence indicating patterns of suspicious behavior, such as imagery showing militants gathering at known al-Qaeda compounds or unloading explosives.’³² These strikes are known as ‘signature strikes.’ They are also termed ‘crowd killing’³³ for they prioritize the targeting of a group rather than an individual. These strikes contrast from ‘personality strikes,’ which target individuals whose identification must be secured first from a ‘kill list.’

Experience in Pakistan has led to the CIA becoming adept in understanding what was happening inside a compound, based on the location and number of security operatives surrounding the site.³⁴ The ‘signature’ consists of profiling the visual patterns of group activity and movements perceived through the scopic regime of drone technology. The ingredients behind ‘signature strikes’ are indicative of the growing reliance on automated vision and visual pattern recognition on the battlefield. Signature strikes are the culminated tactic directly born from the progression of drone technology. This tactic of ‘crowd killing’, through the filter of a drone’s scopic regime, systematizes the mistakes that lead up to the Afghan tragedy. That contextual blindspot is transformed into a

³² Miller, *CIA seeks new authority to expand Yemen drone campaign*, 1.

³³ D. Klaidman, ‘Drones: The Silent Killers’, *The Daily Beast*, 28 May 2012, [online] Available at: (<http://www.thedailybeast.com/newsweek/2012/05/27/drones-the-silent-killers.html>) [Accessed 4 June 2012].

³⁴ Miller, *CIA seeks new authority to expand Yemen drone campaign*, 2.

capability, where proponents of the policy on signature strikes have argued that in Pakistan, the CIA ‘killed most of their ‘list people’ when they didn’t know they were there.’³⁵ Although I have argued that drone warfare is based on a visual primacy and reliant on advanced visual capabilities, paradoxically the argument for the proliferation of its use and its progression in leading tactics of war, as in ‘signature strikes’, has been justified through what *cannot* be seen.

Conclusions

Through this brief analysis of drone warfare in contemporary military engagement, I argue that the production of the image has a direct connection with the destruction of the physical. Drone warfare transforms military space into an electro-optical environment, constructing the site of engagement with the expanding scope of its lens and the corrupted temporality of realtime capture. As shown though the case of the Afghan tragedy, the objective existence of people, places and things under the lens of a drone become defined in and through their relationship to observation. This commits events within the drone’s scope to a fixed narrative within the closed visual circuit of the kill chain. An industrialized mode of vision is employed through the progression of drone technologies, through entropy of the gaze to confront mass production of realtime capture with the Gorgon Stare program and the automation of visual intelligence with the Mind’s Eye program. Precision of the drone equates to an ability to distinguish the enemy. Signature strikes are emblematic of a shift towards automating this process, utilizing pattern recognition for targeting logic. This tactic is the erasure of the individual, the erasure of personality within the theater of war. It presents an imagined war-subjectivity, which filmmaker Harun Farocki has described as, ‘a utopia of war, a utopia that doesn’t reckon with encountering people.’³⁶ Paradoxically, visual primacy in drone warfare results in a form of blindness, in its visual obscuration of low res capture and contextual abstraction of events on the

³⁵ Miller, *CIA seeks new authority to expand Yemen drone campaign*, 2.

³⁶ H. Farocki, ‘Phantom Images’, *Public*, 29, (2004), 21.

ground. To amend this gap in perception, we must look towards that which gets eclipsed in its scopic regime, the material realities of both its technological processes and the lives (and deaths) within its scope.

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Bio

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