

LIMITLESS ILLUSION: ARTISTIC REINTERPRETATIONS OF MILITARY
AERIAL VISION IN WORLD WAR I AND THE WARS IN IRAQ AND
AFGHANISTAN

by

Elizabeth Denholm
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of
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The Requirements for the Degree
of
Master of Arts
Art History

Committee:

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by

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Bachelor of Arts
The Catholic University of America, 2015

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DEDICATION

This is dedicated to my supportive family, friends, and my many mentors, both professionally and academically, from Catholic University and George Mason University.

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I would like to thank my family, friends, and mentors who given me incomparable guidance and made this thesis possible. My friends and family were constant sources of encouragement and pillars of support as I pursued my Master's degree while working full time. I thank them endlessly for their love, patience, and confidence in me.

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ABSTRACT

LIMITLESS ILLUSION: ARTISTIC REINTERPRETATIONS OF MILITARY AERIAL VISION IN WORLD WAR I AND THE WARS IN IRAQ AND AFGHANISTAN

Elizabeth Denholm, MA

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Thesis Director: Dr. Vanessa Meikle Schulman

This thesis explores artistic responses to two pivotal moments in the advancement of military aircraft and aerial imaging technology that marked important shifts in technological innovation and in the conduct of war: the first systematic use of aircraft in World War I, and the implementation of Unmanned Aerial Vehicles (UAVs) or “drones” in the wars in Iraq and Afghanistan. Examining work by artists from Western Europe and the United States, this thesis argues that visual representations that question and reinterpret current issues and societal changes, such as shifting vision, new technology, and major conflicts, are an important tool for interpreting and more deeply understanding complicated socio-political histories, especially because artistic responses often present perspectives or represent groups that have been overlooked or undervalued in traditional historical narratives. Artists who responded to World War I, including C.R.W. Nevinson

(British), used the flatness of the picture plane to emphasize a flattened aerial view made newly possible by airplanes. In the aftermath of 9/11, in a period when governments intensified digital technologies designed to impersonalize warfare, contemporary artists James Bridle (British), Tomas van Houtryve (Belgian), and Trevor Paglen (American) seek out digital media and alternative ways to represent the aerial view of drones. All of these artists engage with the aerial view and often create artwork utilizing the very technology they criticize in order to reveal its limitations and reinsert the human element back into the image. This thesis cannot comprehensively catalogue the development of military flight and aerial vision; rather it considers two specific moments when war, flight, and aerial imaging technology caused significant shifts in visual perception, experienced both by individual soldiers and by artists. Seeking new ways to represent or conceptualize changes in visual perception, artists interrogate the limitations of weaponized vision and criticize the consequences born from those limitations. Artistic responses implore the viewer to observe, engage with, and question the world around them.

INTRODUCTION TO VISUAL PERCEPTION AND ARTISTIC REFLECTION ON SHIFTS IN VISION

Two pivotal moments in the advancement of military aircraft and aerial imaging technology marked important shifts in technological innovation and in the conduct of war: the first systematic use of aircraft in World War I, and the implementation of Unmanned Aerial Vehicles (UAVs) or “drones” in the wars in Iraq and Afghanistan. Aerial imaging captures the pilot’s flattened perspective from the sky and abstracts the people and landscapes it encompasses. Artistic responses to those images call into question notions of perception and attempt to reinsert humanity back into the frame. As imaging technologies advance, soldiers become further removed from the field of battle, and both of these historical moments sparked a radical change in visual perception. This thesis will explore both the expansion of aerial imaging technologies and artistic responses to these developments. Artists who responded to World War I used the flatness of the picture plane to emphasize the new flattened aerial view made possible by airplanes. In the aftermath of 9/11, in a period when governments intensified digital technologies designed to impersonalize warfare, contemporary artists seek out digital media and alternative ways to represent the aerial view of drones. In order to visually represent the invisible and intangible, artists often step outside of traditional visual media

and utilize digital technology. Likewise, their artwork becomes increasingly conceptual. The responses of artists engaging with World War I and the wars in Iraq and Afghanistan do not exist in a political vacuum; rather, the artists discussed in this paper are from countries, often major actors in these wars, that develop and utilize these types of aerial vision. Seeking new ways to represent or conceptualize changes in visual perception, artists interrogate the limitations of weaponized vision and criticize the consequences born from those limitations. Artistic responses implore the viewer to observe, engage with, and question the world around them.

This thesis is by no means exhaustive of all artists responding to war, technology, and flight; nor is it meant to imply that there were no technological advancements in flight, military, and imaging technology between World War I and the wars in Iraq and Afghanistan. The purpose of this thesis is not to catalogue the entire development of military flight; rather, it considers two specific moments when war, flight, and aerial imaging technology caused a significant shift in visual perception, experienced both by individual soldiers and by artists working at the time these developments occurred. These major shifts forced artists to find new ways to represent or conceptualize changes in visual perception.

To understand artistic responses to these shifts in perception, it is necessary to introduce the basic principles of visual perception. Visual perception is a joint effort between the eyes and the mind: the eyes observe the world and the brain organizes that

information to create a *perceptual constancy*, meaning that the individual visually perceives objects they are familiar with as having some constant visual appearance, regardless of changes in perspective or viewing angle.¹ In other words, the more we visually experience an object, the better we are able to create a mental image of it. Humans understand that the physical world exists independent from the self, and that it essentially remains constant regardless of the individual who perceives it. However, the *visual field* of the individual viewer changes; it is dependent upon the individual's position in time and space. The changes in visual field allow us to perceive spatial relationships within our surroundings. Although visual perception is determined by the optical relationship between what the eyes observe and the mind processes, there is also a cultural component that determines how we relate to the world around us. We are conditioned to see the world in a certain way relative to the society in which we live.

In the United States and Europe, there have been several major societal shifts in visual perception, much of which was influenced by art and visual culture. Artists constantly interrogate fields of vision and their work explores, influences, and subverts the way societies see in their contemporary moment, addressing both positive and negative impacts of radical shifts in vision. Prior to aviation, humans (particularly in western cultures) largely saw the world through one visual field in relation to the horizon, which is exemplified in the art, culture, and intellectual thought of the Renaissance. Jason

¹ Carolyn M. Bloomer, *Principles of Visual Perception* (New York: Design Press, 1990), 65.

Weems, the leading art historical scholar on the topic of aeriality, discusses this concept in his book *Barnstorming the Prairies: How Aerial Vision Shaped the Midwest*, stating,

Since the invention of Renaissance perspective, visual experience has been postulated on the model of a horizontal gaze directed into and across space from the viewpoint of a standing human viewer. Sight lines maintain a certain stability because they correlate, albeit to varying degrees of geometric abstraction and extension, to the physical and mental being of a grounded individual.²

Weems goes on to reference philosopher Paul Virilio's concept of the "faith line," which represented the fixed position to which the viewer always relates themselves, thus arguing that even the "bird's-eye" perspective of the Renaissance was ultimately still dependent upon its relation to the horizon.³ If linear perspective and a grounded, horizon-based field of vision encapsulate the ethos of the Renaissance, the ungrounded aerial perspective is definitive of 20th century modernity in the United States and Europe; and drone vision is definitive of a particular moment in a postmodern era as it progresses from an economy of capital and a culture of media in the 1960s to an economy of technology and a culture of endless information and constant change.⁴

Through flight technology, the new aerial perspective in the early 20th century upended the longstanding perceptual constancy of a horizon-centered western world; it presented a new field of vision in which the viewer sees the world flattened from above.

² Jason Weems, *Barnstorming the Prairies: How Aerial Vision Shaped the Midwest* (Minneapolis; London: University of Minnesota Press, 2015) xiii.

³ Weems, xiii.

⁴ In this text, I will use the term "modern" to refer to the 20th century western society influenced by aerial vision, and thus in direct relation to that, I will use term "postmodern" to refer to the 21st century moment within the postmodern era in western society that was influenced by the shift in visual field due to drone vision. These terms do not refer to any particular artistic movements.

Scholars generally accept the idea that aerial perspective provides a seemingly limitless view by giving the viewer a superior surveying position over the vast world below from highest imaginable point of observation. This is commonly referred to as panoptic vision or *panopticism*. This concept is introduced by French philosopher Michel Foucault in his discussion of the Panopticon, a plan for a prison in which the guards can view everything from one observation platform.⁵ This all-seeing vision affords the viewer a nearly God-like position, in which they feel a sense of power over what they observe. Panopticism is a step beyond the “birds-eye view” that had existed in western art history since the Renaissance, physically, perceptually, and theoretically. The birds-eye view places the viewer at a higher vantage point than the subject below, but their position is still determined relative to the horizon line. The birds-eye view also still implies limitation; although it affords the viewer a sense of power over a single point seen below, in the Renaissance interpretation of the concept, the viewer is still subject to a higher power above and is still connected through the horizon line to the ground below. Conversely, panopticism removes any sense of one- and two-point perspective of the Renaissance eye. The panoptic aerial view instead shifts to a vertical perspective void of a horizon line. Unlike the birds-eye viewer, the panoptic aerial view implies an omniscience and omnipotence held by the viewer; they can see all, thus they know and hold power over all.

⁵ Michel Foucault, *Discipline and Punish: The Birth of The Prison*, trans. Alan Sheridan, 2nd ed. (New York: Vintage Books, 1995).

Scholars also widely agree that the shift in perspective to aerial vision was actually destabilizing, and that the panoptic god-like limitless view paradoxically empowers the viewer, while in fact limiting the viewer's understanding of their relationship to what is observed. Panopticism gives the viewer the illusion that they can see the entire world, thus bestowing an illusory sense of power and control over what is below. Because of this, aerial vision has both positive and negative implications and impact. It is exhilarating, progressive, utopian; people in the early 20th century, particularly in the United States and Europe, saw flight as a "miracle of technology," as Jason Weems puts it. He goes on to say, "not only did people perceive flight as intoxicating and liberating, but they also believe that freedom from the bonds of ground and gravity would usher in new outlooks onto society that would enable a reimagination of its spaces and patterns in a new, utopian form."⁶ However, aerial vision is also authoritarian, dangerously limitless, and can be utilized for destruction. There is a consensus among scholars who explore themes of aerial vision that the panoptic view is intimately connected to a false sense of power and control in the viewer, particularly related to the soldier's vantage point in war.⁷ For example, in her 2012 article "From God's-Eye to Camera-Eye," cinematic scholar Paula Amad argues that aerial photography, particularly that produced during World War I, best embodies the "connection between ways of seeing and ways of conquering" because it was an extension of human vision developed on an industrial scale

⁶ Weems, xiii.

⁷ The work of many of the scholars referred to here will be discussed in further depth throughout this thesis.

for the purpose of destruction and war.⁸ I will return to this theme of altered perception and panopticism throughout this text.

Artists played a vital role in interrogating these implications of flight technology and aerial vision in war. World War I marked the first widespread wartime use of aircrafts, which removed the soldier from the enemy he targeted and dramatically increased the number of casualties. Aerial reconnaissance photography developed simultaneously, capturing the pilot's flattened view of the ground below. Photographer Edward Steichen was a pioneer in the development of aerial photography. As a serviceman in the American Expeditionary Forces and a member of the avant-garde, New York-based "Stieglitz Circle," his aerial photography used a visual language legible both to military reconnaissance experts and to his peers in the art world. These aerial images function as maps; the grid-like planar images gave information about the landscape and the position of the enemy. Paradoxically, the aerial view offers the pilot a seemingly limitless worldview, but it is reduced to a planar grid, far removed from the humanity of the soldiers on the ground. Artists responded to aerial photographs by likening the flattened perspective to the flat surface of the painting; they put the viewer in place of the soldier by rendering aerial perspective and the movement of flight.

During the war, Futurist artists were enthralled with this new flight technology and the aerial images it produced, particularly British painter C.R.W. Nevinson, who

⁸ 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, no. 1 (February 1, 2012): 67.

eventually volunteered as an ambulance driver and later became an official British War Artist. Prior to the war Nevinson met Filippo Tommaso Marinetti and alongside him wrote a Futurist manifesto entitled *Vital English Art*, in which Nevinson positioned himself as the gatekeeper of English avant-gardism and regarded most English art as “passé.” Because of this publication, Nevinson was ostracized by fellow British artists and excluded from the British Vorticist movement. As a result, he aligned the style and conceptual content of his artwork with the Italian Futurists. In Nevinson’s aerial images, the Futurist style uses simplified, planar forms to emphasize the flattened perspective of the pilot as seen in aerial photography. But his compositions create a dynamic sense of movement and include subject matter that serves as a reminder of the humanity that is often forgotten in the aerial perspective. After his service, Nevinson no longer aligned himself with a Futurist ideology that glorified war, but the radical fascist-leaning Italian Futurists carried on the aerial themes seen in Nevinson’s paintings until the end of World War II, creating a movement called *Aeropittura* (“aeropainting”), whose subject matter included airplanes and aerial landscapes. Detailed analysis of this artwork will be discussed in the following section of this paper. Although other artists responded to the aerial view through abstraction, select examples of soldier and civilian artists who engaged with flight and aerial perspective beginning in World War I, including Edward Steichen and C.R.W. Nevinson, illustrate the significance of this new technology and vision as a symbol of modernity which brought about both innovation and destruction. In Nicholas J. Saunders’s chapter “Ulysses’ Gaze: The Panoptic Premise in Aerial

Photography and Great War Archaeology,” he calls this a “paradox of vision” that was developed by flight technology and which characterized World War I. He argues that this paradox, “recalibrated human sight, taking its focus away from the middle distance, and towards contrasted and contested extremes of the ultra-distant, and the ultra-close.”⁹ This paradox of vision was presented once again in 21st century military flight technology, intensified and complicated even further.

Nearly 85 years after World War I, the attack on the World Trade Center in New York City and the Pentagon in Arlington, Virginia on September 11, 2001 and the subsequent wars in Iraq and Afghanistan marked another pivotal moment of technological innovation and destruction: the use of Unmanned Aerial Vehicles (UAVs) or “drones.” In this flight technology, the soldier is no longer just removed from the battlefield below, but also from the aircraft entirely. The pilot’s panoptic vision seems to expand, as the frame of vision narrows. Although they can survey the entire world below in remote anonymity, their perspective is reduced to a digital image on a screen. Contemporary artists such as James Bridle, Trevor Paglen, and Tomas van Houtryve create conceptual, digital, and photographic artwork that grapples with the ethical implications of using military drones as weapons and the domestic impact of drones as a means of surveillance. These artworks make an invisible war visible; they co-opt the visual imagery of the military and emphasize the distant frame through which drone

⁹ Nicholas J. Saunders, “Ulysses’ Gaze: The Panoptic Premise in Aerial Photography and Great War Archaeology,” in *Images of Conflict: Military Aerial Photography and Archaeology*, Birger Stichelbaut et al., (Newcastle-upon-Tyne: Cambridge Scholars Publishing, 2009), 27.

pilots see their target, and their complete disengagement from the enemy. Their artwork also captures a deep collective anxiety about the 21st century aerial perspective, as it represents the surreptitious uses of surveillance technology and its potential power over individuals. These artists use contemporary platforms such as digital maps and social media to both create and disseminate their work; they often create outside of traditional media as a means of exploring how to represent the often-intangible digital age.

The artists working during World War I and those working throughout the wars in Iraq and Afghanistan turn to visual media to grapple with issues contemporaneous to the society in which they live. Both are moments of technological innovation in flight and aerial imaging that aid in destruction in warfare, but also cause a shift in visual perception of those individuals in the aircraft. The pilots' view symbolizes a new worldview. In World War I, society saw the thrill of flight, of seeing what looked like the whole world from above. They also witnessed an unprecedented and disillusioning industrialized mass destruction and death. This disillusioned worldview also exists in a post-9/11 society in which visual perception shifts from physical to virtual. With the introduction of drone warfare, vision seems to become limitless and mass destruction can be executed with relative anonymity. I compare these two case studies of artistic responses to societal shifts in conflict, technology, and vision in order to emphasize the important role visual representation plays in grappling with contemporary changes in society. These artistic responses reveal the importance that field of vision has in how people relate to the world around them.

AERIAL IMAGING IN WORLD WAR I

The French army first formally demonstrated aerial reconnaissance imaging from airplanes in a military exercise in 1911, and one year later deployed aerial reconnaissance planes in Morocco; by July 1914, the world was at war.¹⁰ World War I is well understood as a pivotal shift to “modern” warfare, in which industrialization aided in the largest number of casualties in a single conflict. Widespread use of aircraft by all combatants is one of the key modernizations of World War I, and aerial reconnaissance quickly became a vital tool for surveilling the enemy and strategizing unit movements. The French army led innovation of aerial imaging in the war. By August 1914, just one month into the war, they had developed three aerial camera prototypes. The artillery staff to whom the cameras were demonstrated showed little interest in the technology, so the French army developed three photographic units for the express purpose of aerial reconnaissance imaging.¹¹ These became the standard of aerial reconnaissance imaging practices, and the French shared that knowledge with their allies. French officers shared their images and practices with the British army, who used the photographs for mapping and gathering intelligence on the position and artillery holdings of the enemy, which aided in decision-

¹⁰ T. Finnegan and J. Lightfoot, *Shooting the Front: Allied Aerial Reconnaissance and Photographic Interpretation on the Western Front--World War I* (Washington, D.C.: Center for Strategic Intelligence Research, National Defense Intelligence College, 2006), 9.

¹¹ Finnegan and Lightfoot, 11.

making in battle. This influenced the British to follow suit. Although at first the British Royal Flying Corps contracted only a few civilian photographers to capture images over the side of the plane with their own hand-held cameras, by 1915 the British army began to establish formal aerial reconnaissance units and developed aerial cameras built into the planes, suspended within the fuselage, based on a French model.¹²



Figure 1: Captain Edward Steichen and camera, 1918, Art Institute of Chicago

¹² Finnegan and Lightfoot, 44-45.

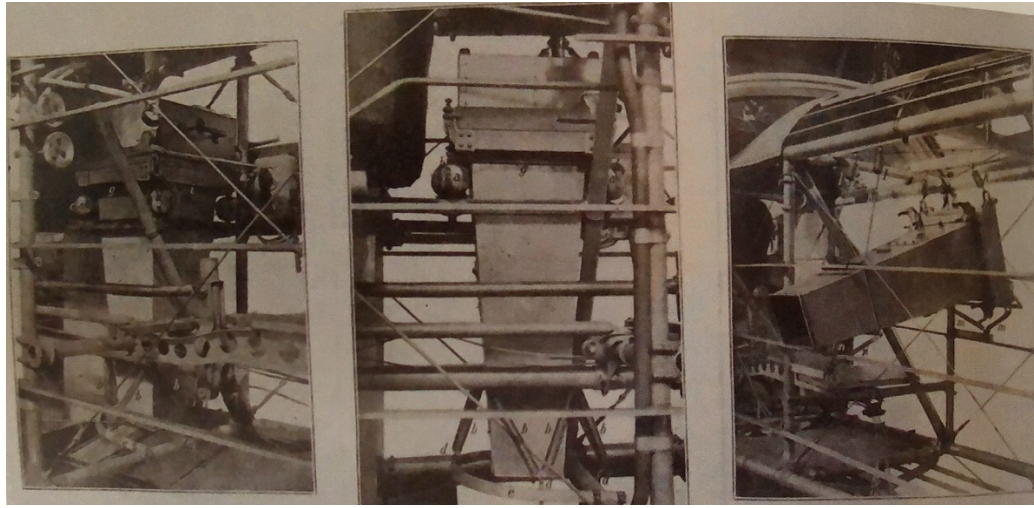


Figure 2: Three photographs of 50 cm aerial cameras within an airplane fuselage, Gorrell Report, National Archives and Records Administration¹³

Aerial camera technology was constantly improving. By fall 1916, “aerial reconnaissance and photographic interpretation were fully integrated with operational planning and execution,” just in time to witness the enormous number of lives lost at Verdun. However, aerial reconnaissance images had now proven their value. As Colonel Terrence J. Finnegan (USAF Retired) states in his book on aerial reconnaissance and photographic interpretation, the events of the year 1915 “had proved that aerial observation, validated by the photograph and transformed into the map, was the most lucrative source for defining the battlefield.”¹⁴ As the war waged on, improved airplane design and a functional and institutionalized aerial reconnaissance program amongst the

¹³ Finnegan and Lightfoot, 386.

¹⁴ Finnegan and Lightfoot, 81.

Triple Entente (particularly the French and British) contributed to their “air supremacy,” or control of the enemy below, both visually and tactically. However, as flight technology developed, the soldier was increasingly removed from the battlefield. The aerial perspective created a drastic shift in the soldier’s visual field; it simultaneously gave him a panoptic, seemingly limitless, view that established a visual sense of supremacy over the enemy below. As Finnegan states, the aerial images produced functioned as maps; the grid-like, planar images give information about the landscape and the movement and position of the ground units. Despite its function for information gathering, the aerial view is flattened and removed from an established three-dimensional vision of reality. The depth perception of the beholder is changed; paradoxically, the aerial view offers the pilot a seemingly panoptic worldview, but one that is reduced to a planar grid, far removed from the humanity of the soldiers on the ground. It creates a constructed sense of reality. The aerial units recognized that the aerial view distorted traditional understandings of depth, form, light, and shadow, and taught their soldiers how to read the flattened aerial image. They developed their own visual language to mark and interpret the photos (*Figures 3 – 6*).¹⁵

¹⁵ United States Army General Staff, "Illustrations to Accompany Notes on the Interpretation of Aeroplane Photographs: Series A", ref. S.S. 550 A.] Ia/12828, "printed in the field by Army Printing and Stationery Services (Plates by Nos. 2 and 4 Advanced Sections, Half-tone and Line-blocks by Process Section)." Provides text, drawings, and accompanying print photographs detailing proper marking and interpretation of aerial photography, with examples of different types of features commonly seen on the battlefields of France (trenches, cables, gun emplacements, etc.); circa 1917-1918. © National Air and Space Museum (NASM-9A16414).

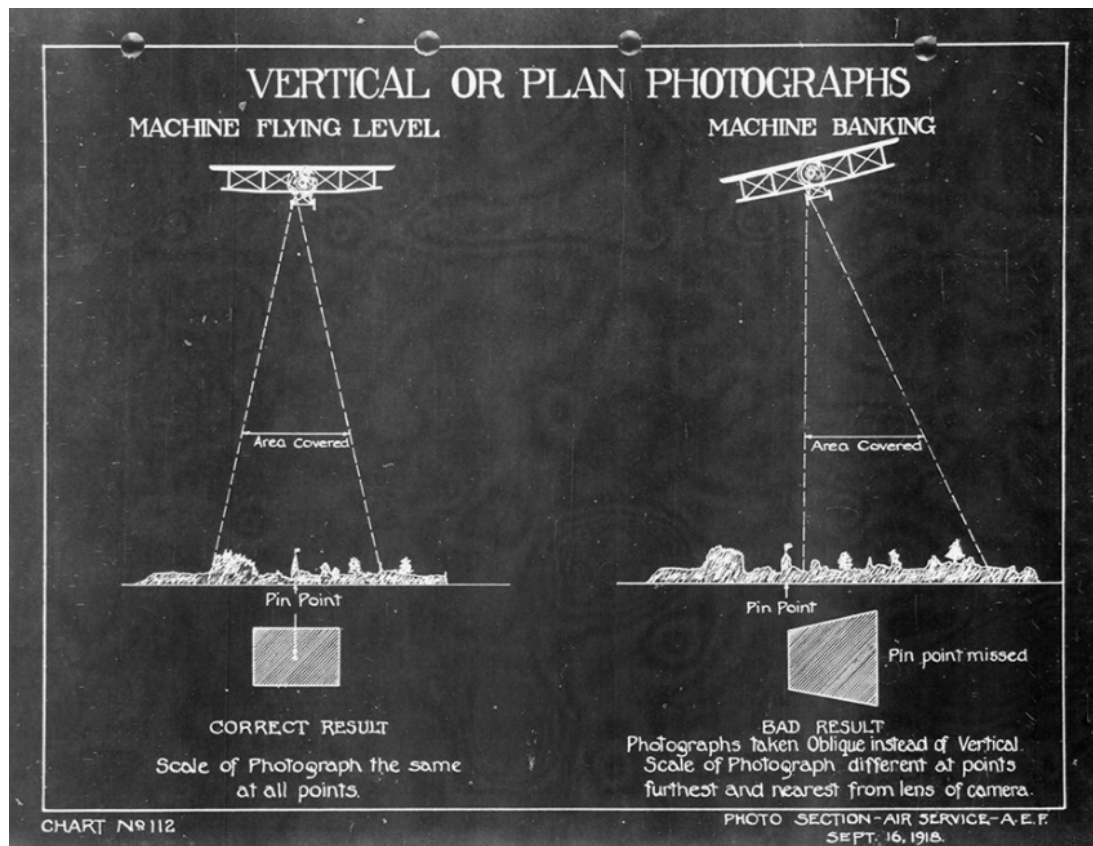


Figure 3: Vertical or Plan Photographs." From Gorrell's History of the American Expeditionary Forces Air Service, 1917–1919, 1974, series G.¹⁶

¹⁶ Accessed via Art Institute of Chicago: <http://media.artic.edu/steichen/11-moulins-les-metz-ideal-type-military-aerial-photo-taken-from-18000-ft-1918/index.html>.

DIAGRAM ILLUSTRATING THE RECONSTRUCTION, FROM THEIR SHADOWS, OF FIVE CIRCULAR OBJECTS SEEN VERTICALLY FROM ABOVE.

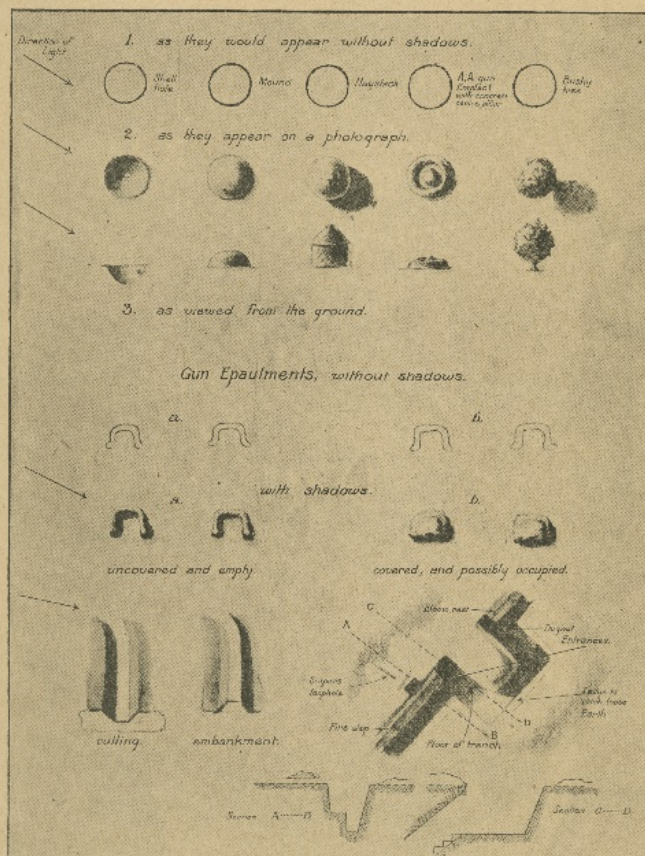


Figure 4: Smithsonian National Air and Space Museum (NASM 9A16414-01).

CONVENTIONAL SIGNS FOR USE ON AEROPLANE PHOTOS.

Meaning.	Sign.	Instructions.
Machine Gun	M.G.	
Trench Mortar	⊙	
Dugout	□	
Observation Post	OP	
Wire Entanglements	X X	Crosses widely spaced shown in front of line of wire.
Gap in path in wire	—	A thin line drawn parallel to actual track.
Dump	Δ	
Battery	—	Drawn in front of and parallel to position.
Battery A.A.	⊙	
Listening Post	L.P.	
Buried Cable	—	Drawn at intervals alongside the line, just ahead of it.
Overhead Cable	—	
Tramway	—	
Probable Tank Trench	◇	
New Work	NEW	

NOTE - The sign to be written clear of the object on the photo, with a detached arrow pointing to it, (when necessary.)

Figure 5: Smithsonian National Air and Space Museum (NASM 9A16414-02).

MACHINE GUN EMPLACEMENT.

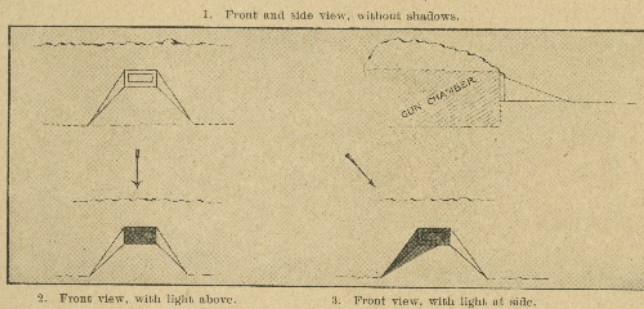
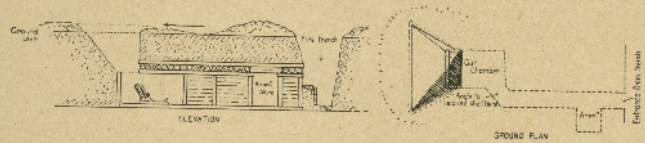


DIAGRAM SHOWING PLAN OF CONSTRUCTION, HEAD COVER AND METHOD OF STORING AMMUNITION, FROM CAPTURED EMPLACEMENTS NEAR PRICOURT.



TRENCH MORTAR EMPLACEMENTS, SHOWING DIFFERENCE IN APPEARANCE ACCORDING TO DIRECTION OF LIGHT.

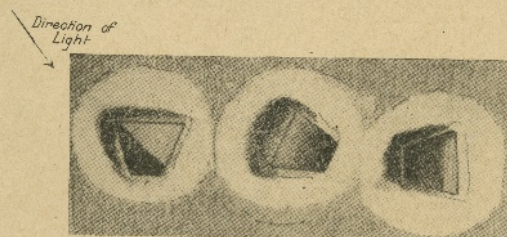


Figure 6: Smithsonian National Air and Space Museum (NASM 9A16414-03).

The use of a visual language and photographic interpretation was very familiar to Edward Steichen, who is not only recognized as one of the most prolific and well-known aerial reconnaissance photographers in World War I (and subsequently World War II), but also one of the most important figures in American art and photographic history. At a young age, Steichen, born in Luxembourg, moved to the United States. He studied with and was a close friend of French sculptor Auguste Rodin in Paris, and became an established artistic photographer who exhibited in the United States and in Europe in the first decade of the 20th century. Steichen was also firmly connected to Alfred Stieglitz and his New York circle and regularly contributed to the publication *Camera Work*. In fact, it was Steichen who encouraged Stieglitz to establish a formal photography group, “Photo-Secession,” whose mission was to bring together American photographers and “advance photography as applied to pictorial expression.”¹⁷ He also encouraged Stieglitz to establish a photographic gallery at Steichen’s old studio at 291 Fifth Avenue, which became the famed 291 Gallery. In a biographic introductory essay to an anthology of Steichen’s writings, Ronald J. Gedrim asserts that Steichen was responsible for connecting Gallery 291 with European Modernist painting because of his connections in France, and he quotes modernist collector Marius de Zayas, who dubbed Steichen the “initiator of the introduction of modern art in America.”¹⁸ Indeed, Steichen traveled to France and sent artwork back to New York from artists including Rodin, Matisse,

¹⁷ Edward Steichen and Ronald J. Gedrim, eds., in *Edward Steichen: Selected Texts and Bibliography*, World Photographers Reference Series, vol. 9 (New York: G.K. Hall & Co, 1996), xv-xvii, 11.

¹⁸ Steichen and Gedrim, 12.

Cézanne, Picasso, and Brancusi.¹⁹ Steichen also recognized his development of Gallery 291 was an important contribution made to the American art world. He claimed this “laid the way for others to successfully organize the big International Exhibition of Modern Art held at the Armory in 1913.”²⁰ The gallery had accomplished what he hoped, to influence the rise of modern art in America and recognize the role of photography as a vital artistic practice.

Although he ultimately considered the gallery as a failed endeavor just one year later in 1914, Steichen turned his artistic eye and photographic skill to a new, more urgent pursuit: World War I. Steichen openly criticized Stieglitz and Gallery 291 for ignoring any engagement with the war, thus denying what he believed was an innate human responsibility. In *Camera Work* he wrote,

Again arrives the unforeseen – came the War. If ever there came, within a time, a psychological element of the universal consequence that could rouse individuals out of themselves as individuals and grip humanity at its very entrails, surely it was this one.²¹

Following his own call to action, Steichen volunteered for the Army in 1917 when America formally entered the war. He was 38 years old, 8 years over the age limit to enlist. Despite this, the US Army gave him permission to enlist as a Lieutenant because of his technical skill in photography. Steichen bridged the role of artist and soldier; his technical proficiency, creative ingenuity, and desire to use his art to make a meaningful contribution in society led him to eagerly volunteer for the Army. Photography became a

¹⁹ Steichen and Gedrim, 11-12.

²⁰ Steichen and Gedrim, 68.

²¹ Steichen and Gedrim, 68.

tool of war, and Steichen saw this as an opportunity to make an impact, unlike his artistic peers in New York whose interest largely focused on “self-promotion.”²² When the US finally entered the war in 1917, Steichen promptly volunteered with a romantic vision of becoming, photographically, to World War I what Mathew Brady was to the Civil War.²³ However, Steichen would become much more than a photographic reporter of war; he would be an active participant and integral to the development of military imaging technology.

In March 1918, Steichen was assigned as the commanding officer of the American Expeditionary Forces (AEF) Photographic Division, headquartered in Colombey-les-Belles, in Northeastern France.²⁴ He made a significant impact on the development of aerial reconnaissance photography and intelligence-gathering in World War I. Under Steichen’s leadership, the Photographic Section of the AEF boasted 55 officers and 1,111 soldiers who produced 1.3 million prints in total. The significance of Steichen’s own impact was certainly not lost on himself. In a 1919 article entitled “American Aerial Photography at the Front” published in *The Camera* magazine, Steichen proudly stated that the men of the AEF were a “definite factor in fighting and winning the war.” He goes on to say,

²² Von Hardesty and Gene Eisman, *Camera Aloft: Edward Steichen in the Great War* (New York: Cambridge University Press, 2015), 8.

²³ Hardesty and Eisman, 10.

²⁴ "History of Photographic Section, Headquarters A.C.A.S, Zone of Advance and First Air Depot, 1918", by 1st Lieutenant W. O. Farnsworth, US Army Air Service, Photographic Officer, Zone of Advance [France], December 20, 1918. Typewritten history of the Photographic Section at US Army Air Service Headquarters, established March 12, 1918. © National Air and Space Museum (NASM-9A16413).

While aerial photographs can be made with a vest-pocket Kodak, it is obvious that where special conditions prevail new instruments and methods must be created to meet these conditions. The work accomplished along these lines during the war stands as a remarkable scientific and mechanical achievement. This achievement, coupled with the courage, skill and endurance displayed in taking and producing the amazing quantity of photographs required, makes up a chapter that is second to none in the annals of photography.²⁵

For Steichen, the development of aerial reconnaissance photography by the AEF in World War I not only marked an achievement in military surveillance tactics and technological advancement of photographic equipment, but it also made a significant impact on the artistic field of photography. Moreover, Steichen believed the images presented an objective truth as historical documents of war, claiming,

These aerial photographs, which have rendered a signal service during the conduct of the war, are now an historical legacy to the nation, ready to serve future generations as an unequaled historical document of war. They represent neither opinions nor prejudice, but indisputable facts.²⁶

However, in order to understand the “truth” of the images, they needed to be interpreted. Steichen acknowledged that the aerial images displayed a skewed, flattened perspective, somewhat contradictory to the claim for their objectivity, cited above. He said, “Without considerable experience and study it is more difficult to read than a map, for it badly represents nature from an angle we do not know.”²⁷ Because of this limitation, the Photographic Section developed a visual language for annotating the images. This taught soldiers how to see, understand, and interpret the information

²⁵ Steichen and Gedrim, 72.

²⁶ Steichen and Gedrim, 74.

²⁷ Steichen and Gedrim, 70.

included in this foreign aerial view. Although these photographs did reveal accurate information about the landscape, locations and movement patterns of the enemy, they certainly do not reveal an objective truth about the nature of war as Steichen suggested, because they leave out an essential element to understanding war: humanity. Through the aerial view, soldiers were removed from the individuals below. World War I has been characterized as the first war of modernity, one defined by machines and technology, like the advanced imaging technologies discussed here. However, this mechanized war ultimately led to the largest number of human casualties ever experienced to that point. It is the human element – not seen in these aerial images – that is equally essential to understanding the complicated historical legacy of this war. Aerial photography in the European theater of World War I made a significant impact on a wider artistic field. Artists throughout Europe and the United States responded to this new aerial field of vision and its impact and implications in war and society. These artistic responses try to upend a notion of the aerial image as “pure truth” and instead expose its destabilizing effect and remind the viewer of the humanity of the soldiers on the battlefield and behind the camera lens.



Figure 7: Edward Steichen, Plate 11. Moulins-lès-Metz. (Ideal type military aerial photo taken from 18,000 ft.), 1918, *WORLD WAR I ALBUM*, Gelatin silver print, Art Institute of Chicago, Gift of William Kistler, 1977.687.



Figure 8: Edward Steichen, Plate 12. Enlargement of small white square on preceding plate, 1918, *WORLD WAR I ALBUM*, Gelatin silver print, Art Institute of Chicago, Gift of William Kistler, 1977.687.



Figure 9: Edward Steichen, Plate 38. *Untitled [Montmedy]*, 1918/19, *WORLD WAR I ALBUM*, Gelatin silver print, Art Institute of Chicago, Gift of William Kistler, 1977.687



Figure 10: Edward Steichen, Composite Image 23: "E of Sayn to NW Grenzen." Smithsonian National Air and Space Museum (NASM 9A05617).

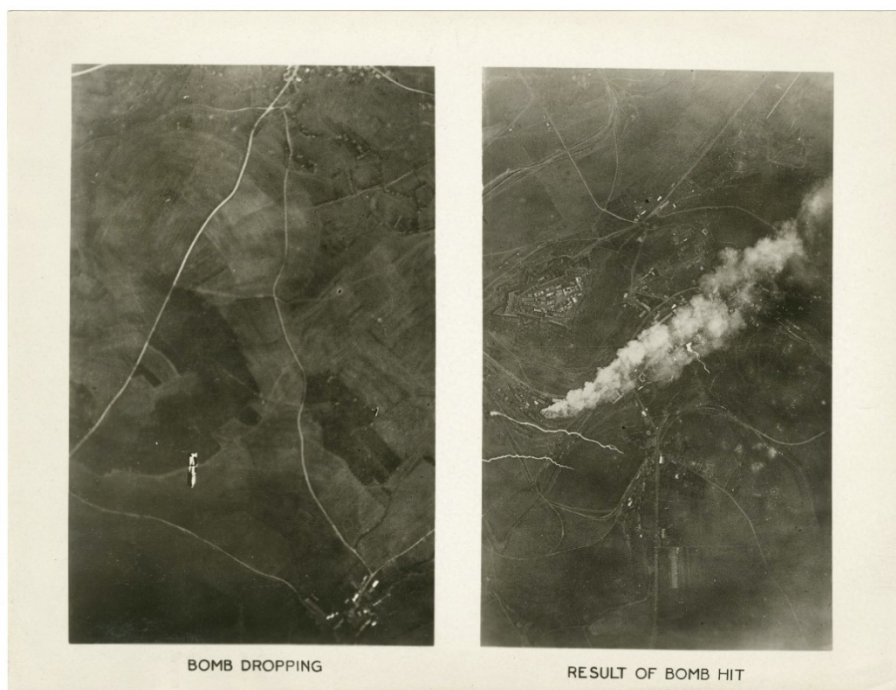


Figure 11: Edward Steichen, BOMB DROPPING. RESULT OF BOMB HIT. Smithsonian National Air and Space Museum (NASM 9A06869).



Figure 12: Edward Steichen, Steichen Photo Reconnaissance in Flight, Smithsonian National Air and Space Museum (NASM 9A12594).

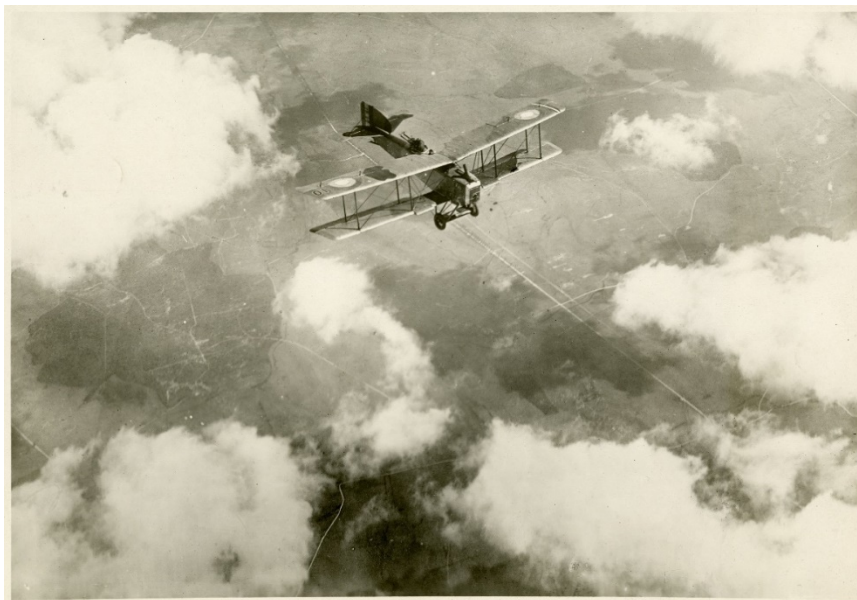


Figure 13: Edward Steichen, Steichen Photo Reconnaissance in Flight, Smithsonian National Air and Space Museum (NASM 9A06519).

ARTISTIC RESPONSES TO AERIAL VISION IN WORLD WAR I

World War I catapulted the western world into a modernity characterized by automation and advancements in weapons technology, which led to mass casualties on a scale never before seen. Traditionally accepted western sentiments toward war shifted during the course of this conflict. At the start of the war, the pervasive nationalistic and romantic notion that war was a glorious act of duty was carried over from 19th century conflicts, but this quickly dissolved for many soldiers, civilians, and artists in the face of the horrifying destruction of World War I. The old romanticized view of war has since been widely referred to as an “illusion” by many artists and scholars. David Lubin’s 2016 book, *Grand Illusions: American Art and the First World War*, references this changing attitude. The book’s title is taken from French filmmaker Jean Renoir’s 1937 anti-war film *La Grande Illusion*, and British author Normal Angell’s 1909 anti-war essay, *The Grand Illusion*.²⁸ Lubin addresses the many societal illusions about the conduct of war that were demolished in the early months of the First World War: that the war would be over by Christmas, allowing soldiers to return home in time for yuletide celebrations; that the fighting would only involve parties in direct conflict, and not those who remained neutral; and that the conflict would not become entangled with civilian populations (that

²⁸ David M. Lubin, *Grand Illusions: American Art and the First World War* (New York: Oxford University Press, 2016), ix.

it would devastate civilians from across the warring nations was unimaginable).²⁹ Lubin argues that the circulation of images of war among the masses played an integral part in shattering such previously-held illusions and in establishing new ones. Artistic responses to war, whether through direct depiction or indirect references, simultaneously discarded outdated notions of war and established archetypes of soldiers and civilians across the clashing parties, which ushered in a shocking new era of war in the 20th century.³⁰ Such archetypes helped soldiers establish self-identity – both positive and negative – and created a visual vocabulary for mass consumption, which still has a lasting impact today. At the beginning of the war, some artists glorified it, particularly the Futurists who developed in Italy and whose influence spread throughout Europe. However, as the war waged on, many other artists responded with abhorrence to its catastrophic reality. Artists also directly engaged with the newfound aerial vision made possible by flight technology, and explored its effects on those in the air and on the ground.

In his body of work created during World War I, British artist C.R.W. Nevinson responded to aerial imagery and flight technology. Due to personal experience in the war, his personal feelings about war changed, paralleling a societal shift in attitude toward war. In 1914 Nevinson clung to romanticized ideals of war and exalted it, but by the war's end was disillusioned and no longer held fast to those early ideals. Personally, Nevinson embraced the war effort and volunteered to be an ambulance driver for the

²⁹ Lubin, 1.

³⁰ Lubin, xi.

military in order to fulfill his national duty. He aligned himself with the Italian Futurist artists, whose principles venerated war and violence, and saw World War I as a necessary global cleansing to usher in the age of modernity.³¹ Like many other artists at the time, Nevinson was enamored with Italian Futurism, and his personal and artistic identities were deeply influenced by the group's founder Filippo Tommaso Marinetti, who made a significant impact among intellectual circles in London. Marinetti first spoke publicly in London in 1910 at the Lyceum Club to promote the newly established Futurism. He returned again in 1912 to give a lecture entitled "Futurism in Literature and Art" to continue to build the movement's following.³² In this lecture Marinetti stated that he believed London had potential to become another hub of Futurist activity. He expressed admiration for the city's implementation of modern technology, including new underground transportation, electric lights, buses, and automobiles. He even admired the "brutality and arrogance" of the British people, two qualities which Marinetti and the Futurists also exude in their manifestos. At this time, England was starting to reject Victorian ideals and to move into modernity, not only through technology and the embrace of foreign inventions like the automobile, but also through social change such as the women's suffrage movement and the rise of industry and trade unions.³³ London had

³¹ Richard Ingleby, Jonathan Black, David Cohen, and Gordon Cooke, *C.R.W. Nevinson: The Twentieth Century* (London: Merrell, 2000), 15; Italian Futurist leader F.T. Marinetti referred to war as "the only hygiene of the world," in F.T. Marinetti, "The Founding and Manifesto of Futurism," in *Futurism: An Anthology*, ed. C. Poggi, L. Rainey, and L. Wittman (New Haven: Yale University Press, 2009), 51.

³² Michael J. K. Walsh and C.R.W. Nevinson, *C.R.W. Nevinson: This Cult of Violence* (New Haven: Yale University Press, 2002), 46.

³³ Walsh, 41.

the potential to launch Britain into the modernist, technology-driven future that the Futurists so admired. Marinetti recognized that potential and saw it as congruent to the Futurist philosophy. “The Futurist Manifesto” of 1909 states the need to violently overthrow traditional old-world European ideals with technology, science, and automation. It proclaims,

...4. We affirm that the beauty of the world has been enriched by a new form of beauty: the beauty of speed. A racing car with a hood that glistens with large pipes resembling a serpent...8. We stand on the promontory of the centuries!...Why should we look back over our shoulders, when we intend to breach the mysterious doors of the Impossible? Time and space died yesterday. We already live in the absolute, for we have already created velocity which is eternal and omnipresent...

Do you wish to waste your best strength in this eternal and useless admiration of the past, an activity that will only leave you fatally spent, diminished, and crushed? I declare, in all truth, that a daily visit to museums, libraries, and academies (cemeteries of futile efforts, Calvaries of crucified dreams, record books of broken assaults!...) is as dangerous for artists as a prolonged guardianship under the thumb of one's family is for certain young talents intoxicated with their own genius and their ambitious aims. For the sickly, the ill, or the imprisoned – let them go and visit: the admirable past is perhaps a solace for their troubles, since the future is now closed to them...But we intend to know nothing of it, nothing of the past – we strong and youthful *Futurists*!³⁴

Despite Marinetti's remarks in admiration of London, he also criticized the British people in that same 1912 lecture, belittling them as a nation of “sycophants and snobs, enslaved by old worm-eaten traditions, social conventions, and romanticism.”³⁵ Despite seeing London as a modern metropolis, Marinetti regarded England as a backward, pastoral country that relied on outdated tradition, although it was on the cusp of modernity.

³⁴ Marinetti, “The Founding and Manifesto of Futurism,” 51-52.

³⁵ *The Daily Chronicle*, 20 March 1912, quoted in Walsh and Nevinson, 47.

Perhaps it was this backwardness that also attracted Marinetti to London. As a group of revolutionaries who sought to violently overthrow what they believed to be outmoded European culture through the destruction of traditional centers of intellectual and artistic power and influence, such as museums, libraries, academies, the Futurists saw London as another city whose traditions were ripe for toppling.³⁶ By delivering this lecture to London's intellectual elite, he not only warned them of the revolution that Futurism would usher in, but sought to recruit those leaders of the artistic and intellectual circles to turn on their establishments and join him in the revolt. Marinetti's influence indeed swept London. His writings and philosophies circulated among the more modern-minded intellectual groups of artists and writers, including Nevinson's mother and father. His suffragette and journalist mother, Margaret Wynne Nevinson, responded to Marinetti's first lecture in 1910 about Futurist attitudes toward women, although hers was a deeply critical response; and his father, Henry Nevinson, attended the *Exhibition of Works by the Italian Futurist Painters* at the Sackville Gallery in March 1912. Unlike his wife, Henry notably admired the Futurists and wrote about Marinetti's poetic work with great admiration.³⁷ In 1913, another leading Futurist artist, Gino Serevini, joined the Nevinson family for dinner and according to Henry Nevinson's journal they "talked Futurism in French."³⁸

³⁶ Marinetti, "The Founding and Manifesto of Futurism," 51.

³⁷ Walsh, 48.

³⁸ Walsh, 54.

Nevinson was intimately aware of the Futurist principles through the intellectual groups among which his family circulated, and the exciting new Futurist artistic style made a deep impression on him as a young artist. Nevinson completed his studies at the Slade School of Fine Art in London in 1912, and as a fledgling artist he struggled to exhibit and receive critical praise. This is largely due to his painting style which was heavily influenced by the Post-Impressionist style that was favored at Slade although quickly falling out of fashion in England, Europe, and the United States.³⁹ Although it is unknown if Nevinson attended the 1912 exhibition at the Sackville Gallery, he was certainly aware of Marinetti and the Futurists. In fact, the following year in 1913, Nevinson caught word that Marinetti planned to visit London, and he promptly arranged a dinner for the poet. Because of this, Nevinson believed that he was the person responsible for bringing Futurism to England and the artist most closely associated with the Futurist movement, and presented himself as such through his changing artistic style, interviews, and self-promotion.⁴⁰ Although Futurist influence existed in London before Nevinson's involvement in the movement, he clung to the notion that he had introduced it, in order to create a more esteemed public reputation for himself. He was not admired by art critics and sought to align himself to a philosophy and aesthetic that were quickly becoming "en vogue" in Europe and the United States. He admired the rebel artist persona that Marinetti and the Italian Futurists embodied and wanted to assume that role.

³⁹ Walsh, 50.

⁴⁰ Walsh, 50.

Scholar Michael J.K. Walsh suggests that this was in part an attempt for Nevinson to compensate for the fact that his personal identity was in fact antithetical to that of the Futurists.⁴¹ Not only was Nevinson dissatisfied with his lackluster painting career, but he had many health issues in his young life, including pericarditis (a swelling of the membrane surrounding the heart). He was “the sickly, the ill” for whom the “Futurist Manifesto” proclaimed that the future was closed. Nevinson clung to the rebellious, hyper-masculine persona held by the Italian Futurists. He subscribed to their rhetoric and increasingly emulated their artistic style beginning in 1913 and continuing well into World War I. This style was fixated on dynamism; the Futurists sought to recreate the sense of speed and movement of modern inventions in their artwork. The final tenet of the “Futurist Manifesto” reads,

11. We shall sing the great masses shaken with work, pleasure, or rebellion: we shall sing the multicolored and polyphonic tidal waves of revolution in the modern metropolis; shall sing the vibrating nocturnal fervor of factories and shipyards burning under violent electrical moons; bloated railroad stations that devour smoking serpents; factories hanging from the sky by the twisting threads of spiraling smoke; bridges like gigantic gymnasts who span rivers, flashing at the sun with the gleam of a knife; adventurous steamships that scent the horizon, locomotives with their swollen chest, pawing the tracks like massive steel horses bridled with pipes, and the oscillating flight of airplanes, whose propeller flaps at the wind like a flag and seems to applaud like a delirious crowd.⁴²

The machines mentioned here are the subject of Futurist art, which are reduced to planar forms and rendered to create a sense of movement through dynamic lines that converge

⁴¹ Walsh, 49.

⁴² Marinetti, “The Founding and Manifesto of Futurism,” 51-52.

and diverge across the picture plane. By 1914, critics began to recognize the Futurist influence in Nevinson's artwork, and Nevinson publicly proclaimed that he was a disciple of Gino Serevini and the Futurists in an interview published in the *Observer*.⁴³ Not only did Nevinson shift his artistic style to mimic Futurism, but he also co-wrote "A Futurist Manifesto: Vital English Art" with Marinetti to further claim ownership of British Futurism. It intended to unite artists under the ideals of strength, virility, violence, anarchism, and anti-academic art.⁴⁴ The manifesto was published in June 1914 on the brink of World War I, and its rhetoric echoed the English nationalism that carried many soldiers proudly into the war. It stated,

WE WANT:

1. – To have an English Art that is strong, virile, and anti-sentimental.
2. – That English artists strengthen their Art by a recuperative optimism, a fearless desire of adventure, a heroic instinct of discovery, a worship of strength and a physical and moral courage – all sturdy virtues of the English race.
3. – Sport to be considered an essential element in art.
4. – To create a powerful advance guard, which alone can save English Art, now threatened by the traditional conservatism of Academies and the habitual indifference of the public. This will be an exciting stimulant, a violent incentive for creative genius, a constant inducement to keep alive the fires of invention and art, so as to obviate the monotonous labour and expense of perpetually raking out and relighting the furnace.
5. – A rich and powerful country like England ought without question to support, defend, and glorify its advance guard of artists, no matter how advanced or how extreme, if it intends to deliver its Art from inevitable death.
6. – So we call upon the English public to support, defend, and glorify the genius of the great Futurist painters or pioneers and advance forces of the vital

⁴³ Walsh, 68.

⁴⁴ C.R.W. Nevinson and F.T. Marinetti, "A Futurist Manifesto: Vital English Art" in *Futurism: An Anthology*, 196-198.

English art – ATKINSON, BOMBERG, EPSTEIN, ETCHELLS,
HAMILTON, NEVINSON, ROBERTS, WADSWORTH, WYNDHAM
LEWIS.⁴⁵

Despite its intention to encourage a glorious new English art aligned with Futurist ideals, Nevinson and Marinetti's "Vital English Art" was not well received by their artistic and intellectual British peers. In fact, it became divisive. Because Nevinson positioned himself as the gatekeeper of English avant-gardism and regarded most English art as "passé," it ignited a hostility among English artists toward both Nevinson and Italian Futurism. Wyndham Lewis, who is named as one of the great artists in the manifesto, led an "anti-Futurist" artistic movement which led to the creation of Vorticism.⁴⁶ Lewis and the Vorticist artists scoffed at Italian Futurism and claimed that all the modern machines they revered actually originated from England. In terms of artistic style, the Vorticists aimed to apply classical principals and techniques and use precise, solid, geometric forms to represent modernity and industry. They believed this precise and reverent style would differentiate them from the Futurists, whose artwork they believed revealed a superficial fascination with modernity.⁴⁷ Although there are many stylistic similarities in the work of the Futurists and Vorticists, Nevinson was ostracized by his peers and thus continued to align with Italian Futurism as World War I began.

Nearly all Futurist artists enlisted proudly in the war, in accordance with the "Futurist Manifesto's" ninth tenet: "We intend to glorify war – the only hygiene of the

⁴⁵ Nevinson and Marinetti, 197-198.

⁴⁶ Walsh, 81.

⁴⁷ Walsh, 86.

world – militarism, patriotism, the destructive gesture of anarchists, beautiful ideas worth dying for, and contempt for woman.”⁴⁸ In November 1914, just six months after the publication of “Vital English Art” and a few months into World War I, Nevinson volunteered with the Red Cross as an ambulance driver alongside his father in Dunkirk, France. Because of a limp from his previous illnesses, Nevinson would not have been accepted as a soldier by the British army but wanted to support the war effort. Interestingly, however, Walsh points out that in Nevinson’s 1937 autobiography *Paint and Prejudice*, he made no nationalistic claim about his decision to join the war effort: “I regarded myself as having no patriotism, though I preferred the English.”⁴⁹ Despite his early self-proclaimed alignment with Futurism, his statement reveals that perhaps he either did not fully embrace the Futurist nationalism and glorification of war and violence, or that his personal experience in war changed his ideals. In fact, there is evidence that Nevinson’s father was largely responsible for his involvement in the war, and when Nevinson’s ambulance crew thought they might need to take up arms to defend themselves in Dunkirk, he asked if they might not “claim immunity” to avoid conflict.⁵⁰

By 1915 Nevinson returned to London and began to paint a series of works on the harsher realities of war: exploding bombshells, chaos in the trenches, wounded and dying men. Although rendered in a Futurist style, the subject matter taken from his personal experience in war suggested that he did not actually ascribe to the violent Futurist

⁴⁸ Marinetti, “The Founding and Manifesto of Futurism,” 51.

⁴⁹ Walsh, 95.

⁵⁰ Walsh, 98.

philosophy. Despite this, Nevinson still presented a Futurist persona to the press, but now chose to differentiate himself from the Italian Futurists. In his publication entitled “Painter of Smells at the Front: A Futurist’s View of the War” in the newspaper the *Daily Express* in 1915, Nevinson encouraged all artists to go to war to “strengthen their art by a worship of physical and moral courage.” However, in the same publication he claimed, “unlike my Italian Friends, I do not glory in war for its own sake, nor can I accept their doctrine that war is the only health-giver.”⁵¹ Nevinson wanted to present himself as a strong artist-soldier and implored all English artists to go to the front to build a reputation of the modern artist that was counter to those Nevinson called their “effeminate” Victorian predecessors.⁵² Even so, he now saw the danger in the rhetoric and ideology of the Italian Futurist group. After his experience as an ambulance driver in the war in 1914, his opinions on the Futurist ideology shifted significantly, and he felt it necessary to overtly distance himself from them in the face of an English public that was socially and politically divided by the war.

Nevinson had to reconcile how to create artwork depicting war in an avant-garde style and present it as honorable and a defining factor of the modern artist while simultaneously disassociating with the more fanatic Italian Futurists. He began to engage with images of flight seen from the ground and aerial perspectives seen from the air. As a new phenomenon of modernity, flight and airplanes were a vital subject for Futurists. The

⁵¹ “Painter of Smells at the Front: A Futurist’s View of the War,” *Daily Express*, February 25, 1915, quoted in Walsh and Nevinson, 98.

⁵² Walsh, 98.

final tenant of the “Futurist Manifesto proclaims, “we shall sing...the oscillating flight of airplanes, whose propeller flaps at the wind like a flag and seems to applaud like a delirious crowd,” and by the late 1920s Futurist artists developed an artistic theme called *aeropittura*, which was based solely on the depiction of airplanes and flight⁵³ The Through Nevinson’s reconstruction of the aerial view and depiction of airplanes in flight, he was able to maintain ties to the avant-garde. He used simplified, planar forms to create a dynamic sense of movement and to emphasize the flattened perspective of the pilot as seen in aerial photography. However, he also reinserts reminders of the humanity behind the machine of war, such as birds, visible portions of the aircraft, and pilots. In his 1915 painting *Taube Pursued by Commander Samson* (Figure 14), he depicts three planes in flight through a clouded sky. Nevinson breaks up the picture with planar shapes. The sky is depicted in angular horizontal bands of color and two diagonal rays of light that shoot up from the cloud in the foreground. He also uses geometric shapes to imply movement; the simplified, rectangular forms that comprise the airplanes are repeated in muted colors behind them, implying forward speed. Nevinson paints the scene from the perspective of a soldier below, who looks up and catches a glimpse of the planes whooshing by.

⁵³ Marinetti, “The Founding and Manifesto of Futurism,” 51-52.



Figure 14: Taube Pursued by Commander Samson, 1915. Hendon Royal Air Force Museum, London. Reproduced in Ingelby, 113.

Following the airplanes' path, the viewer's eye is drawn to a bird in flight. Like the planes, muted repetitions of its form trail behind it and it appears to be flying just as fast. Although there is an obvious metaphor of airplanes as great, mechanical birds, the bird in flight is a humanizing visual element that Nevinson repeats throughout his aerial paintings of flight, speed, and modern marvel. It is a reminder to the viewer— who sees through the eyes of the soldier— of life and nature outside of an all-consuming, industrialized war and the narrow scope of an aerial viewpoint. It is, perhaps, an element of hope and vitality. These humanizing elements in Nevinson's work indicate that his personal feelings toward and experience in combat are quite different than the war-glorifying Italian Futurists with whom he associated. Aerial imagery would continue to become a prominent theme in Nevinson's artwork. In 1917 Nevinson commissioned as an officer and re-entered the war as an official war artist of the English army. He was a frequent passenger in military airplanes at this time and thus produced more aerial artwork, such as many of the lithographs created for a government publication, "The Great War: Britain's Efforts and Ideals." *Sweeping Down on a Taube (Figure 15)* is strikingly similar to his 1914 painting.



Figure 15: C.R.W. Nevinson, Sweeping Down on a Taube, in "Britain's Efforts and Ideals." 1917. Lithograph on paper. © Tate.

Striking geometric rays of light emerge from a cloud in the foreground and illuminate a nose-diving Taube plane. Unlike the abstracted planes in the earlier painting, Nevinson

renders this one as a powerful inky-black silhouette with swooping strokes coming off of its tail, indicating its rapid descent. The diagonal wings of the plane again point the viewer's eye to a small bird soaring upward. It appears that the plane and bird may converge along their flight paths, signaling a clash of nature and machine. In other lithographs from the same series such as *In the Air (Figure 16)*, and *Banking at 4,000 Feet (Figure 17)*, Nevinson places the viewer in the air and depicts the ground below. Like the aforementioned works, he reduces the image to planar forms, but in these images, it exemplifies the shapes and patterns of the landscape that the pilots see from above. The patchwork fields rendered here reconstruct the pilot's view as seen in the aerial reconnaissance photographs. However, in the artistic representations, Nevinson does not present a fully vertical perspective. Instead, he references the map-like terrain but chooses to place emphasis on the human elements of the image. For example, in *Banking at 4,000 Feet*, the viewer is unsettled by a strong diagonal composition. The aircraft tilts sharply to the right, and even though the gridded landscape is visible below, the frame is occupied by the wings of the plane and the pilot. Moreover, on the left side of the frame, legs extend and an arm grips the side of the plane and hold on tightly as it banks. This body is an extension of the viewer, which places them in the aircraft behind the pilot. By assuming the body Nevinson provides for them, the viewer also assumes the sense of dread delineated by the hand that grasps for stability. The composition makes the viewer feel as though they might be dumped from the side of the plane as it maneuvers with incredible speed and force.

Nevinson again situates the viewer inside of the aircraft in *In the Air* from that same lithograph series. The perspective is not entirely aerial; there is a horizon line. Although it is placed very high which tilts the landscape up and reveals a view of a great expanse of the geometric landscape, the horizon line still establishes a perspectival familiarity. The viewer is given more of a bird's-eye view. They can see a small portion of the cloudy sky, two other British biplanes in flight, and much of the ground below. Perhaps the three planes are circling an area to take reconnaissance photos or drop a bomb. The viewer is presumably placed behind the pilot again, as made evident by a visible portion of the left wing positioned in front of them. It extends diagonally from the top left corner of the frame, which situates the viewer inside the airplane, gazing over its left side. In fact, the angle of the viewer's perspective and the nearly identical wing suggest that *In The Air* depicts what the individual in *Banking at 4,000 Feet* sees when they turn to look to the left. This further reinforces Nevinson's device of putting the viewer in place of the soldier, perhaps in an attempt to encourage an empathy for him and his precarious position. Because the soldier's view is removed from the planar forms below, he cannot distinguish humanity as he understands it in his everyday worldview.

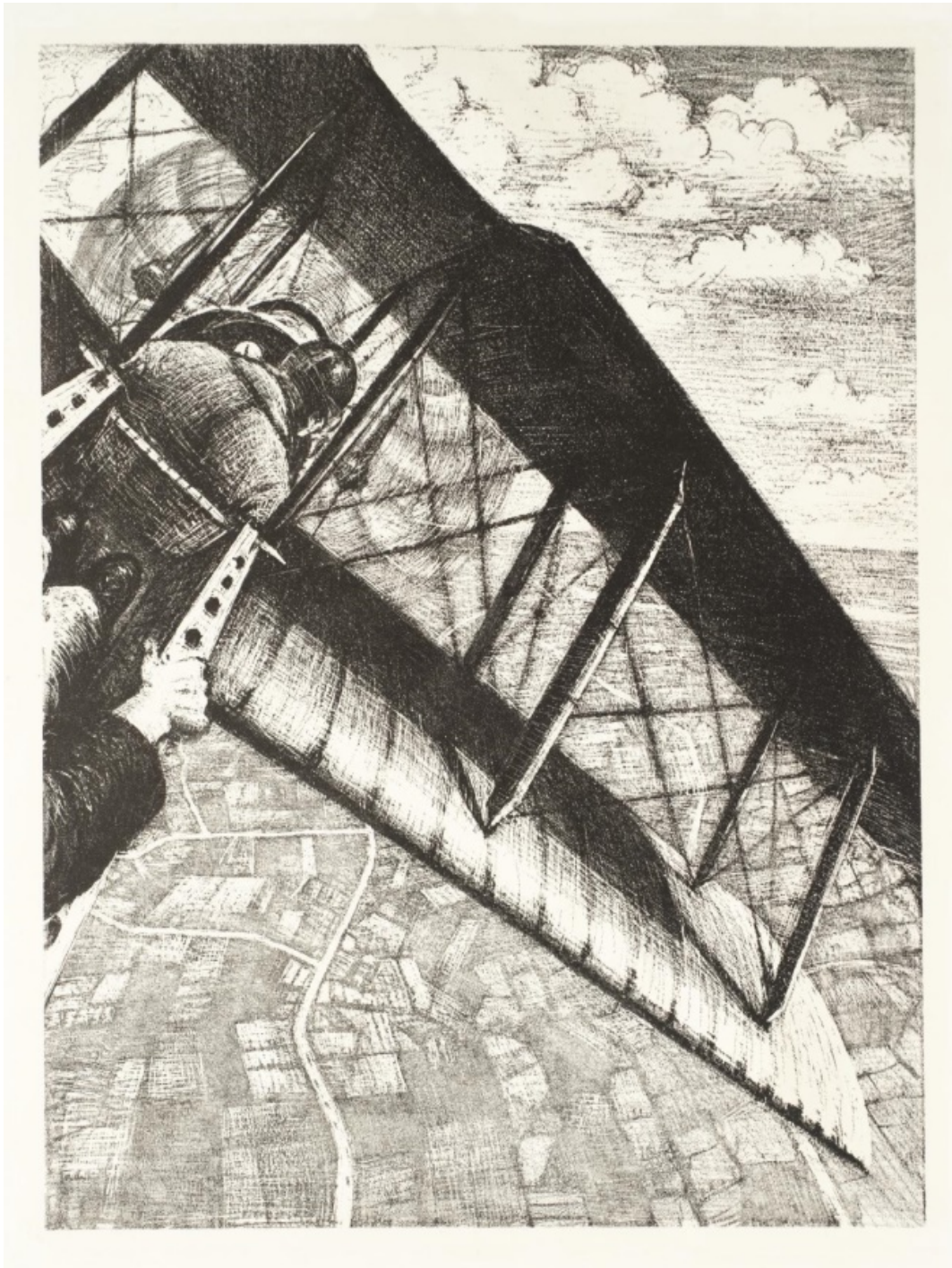


Figure 16: C.R.W. Nevinson, Banking at 4,000 Feet, in "Britain's Efforts and Ideals." 1917. Lithograph on paper. © Tate.

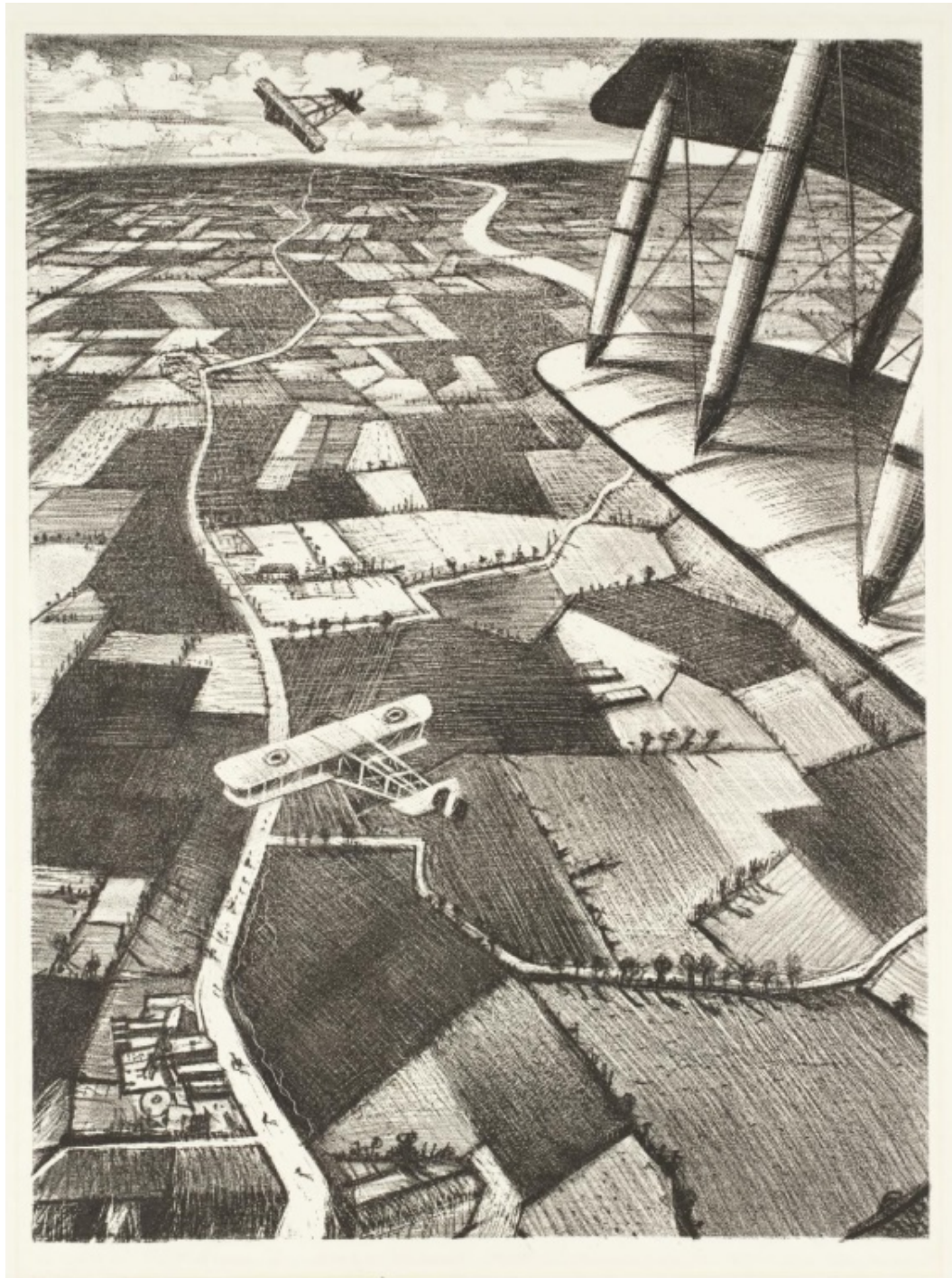


Figure 17: C.R.W. Nevinson, *In the Air*, in "Britain's Efforts and Ideals." 1917. Lithograph on paper. ©

The soldier reads the landscape mathematically, scrutinizing shape, relative size, shadow, pattern, and color. He possesses the “God’s Eye View” that gives a fictive sense of power and control by possessing everything in sight from above. Art historian Jason Weems interrogates aerial vision’s sense of power, considering it the “defining perspective of the 20th century” in Europe and the United States while recognizing its limitations and subsequent ramifications in war.⁵⁴ Weems states that the aerial view made the landscape “become objectified, miniaturized, and therefore open to systematic manipulation.” He further recognized that it brought the viewer a “powerful sense of disembodiment,” stating, “this sense of unlimited viewing and unfettered being, which in an era of early aviation was often characterized through a terminology of transcendence over both physical laws and subjective limitations, sometimes imbued aerial looks with an outsized sense of their own command of the world and the ability to bring order to it.”⁵⁵ The characterization of aerial perspective as a god-like, limitless view is widely accepted by scholars, who also agree that this had a particularly negative effect in World War I. Paula Amad argues that the aerial perspective as seen through reconnaissance photography in World War I is an exemplary connection between “vision and violence,” and that aerial vision was an “extension of human vision, as it developed on an industrialized scale in the First World War, [which] was literally attached to the more

⁵⁴ Weems, xv.

⁵⁵ Weems, xv.

efficient annihilation of humans.”⁵⁶ In his aerial artwork, Nevinson intentionally puts the viewer in place of the soldier in the nebulous, in-between space of the skewed vertical perspective and grounded horizontal perspective. He personally experienced the human annihilation Amad condemns and had a complicated artistic relationship to the war. His artwork reflects that relationship through the juxtaposition of the human soldier with the planar, geometric forms of the calculated target seen below.

Nevinson’s military service, his eventual chosen ideological (and geographic) distance from the Italian Futurists, and his nuanced body of work as a war artist prevented him from becoming too deeply entangled with a dangerous ideology. Marinetti and the Italian Futurists did not just promote a passive philosophy and visual and literary aesthetic; they eventually segued into a fascist political group that bolstered Benito Mussolini’s rise to power and whose artwork served as political propaganda. After initial popularity, several years into the war artists and intellectuals publicly denounced Futurism and looked back in shame at their involvement. Nevinson’s father Henry who once wrote in admiration of Marinetti later wrote in his memoir, “It is a black thought for me to look back and see that I was associated with Italian Futurism, which ended in Fascism...What a fate for an intellectual idea!”⁵⁷ Photographer Edward Steichen also expressed a disgust with Futurism, whose militaristic ideology caused, in part, his schism with 291 Gallery and fueled his patriotic desire to join the Army. He recalled, “In the

⁵⁶ Amad, 66.

⁵⁷ Walsh, 93.

beginning of August, 1914, dogma demonstrated its failure again and as far as '291' was concerned I was then ready to put an art movement such as futurism with anarchy and socialism into the same bag as Church and States to be labeled 'Dogma' and relegated to the scrap heap – History.”⁵⁸

Despite scathing criticism in England, Futurism continued in Italy and the group's interest in flight increased and persisted through World War II. On September 22, 1929, the Futurist publication “Manifesto of Aeropainting,” penned by Marinetti and eight other artists, ignited second generation Italian Futurists to develop a theme called “aeropittura” that specifically depicted flight. Despite the many avant-garde and arguably Futurist paintings of flight and airplanes created in World War I, the manifesto dubbed Fedele Azari's *Perspectives of Flight* (Figure 18) from 1926 the first aeropainting.⁵⁹ These second-generation Futurists still championed violence and militarism. However, they recognized that the aerial view was a constructed view of reality. The manifesto proclaims, “The shifting perspectives of flight constitute an absolutely new reality which has nothing in common with reality as traditionally constituted by a terrestrial perspective,” and “The elements of this new reality are unstable and are constructed by perpetual mobility.” Even those that exalt it understand its powerful limitations.⁶⁰

Artistic responses to flight were, in part, made possible by Edward Steichen, who played a significant role in developing aerial reconnaissance photography. Because of his

⁵⁸ Steichen and Gedrim, 68

⁵⁹ Giacomo Bella, Bendetta, Fortunato Depero, Gerardo Dottori, Fillia, F.T. Marinetti, Enrico Prampolini Mino Somenzi, and Taro, “Manifesto of Aeropainting” in *Futurism: An Anthology*, 283.

⁶⁰ “Manifesto of Aeropainting, 283

artistic background and ties to avant-garde circle in New York, this aerial perspective became all the more relevant to his artistic peers. However, a significant number of artists also engaged with this new aerial perspective in their work because they experienced it firsthand as soldiers – or in Nevinson’s case a medial volunteer – in World War I, and some were also commissioned as official war artists. It was this moment that marked a turning point in visual perception, and artists continued to grapple with aeriality as technologies rapidly developed throughout the 20th and 21st centuries.

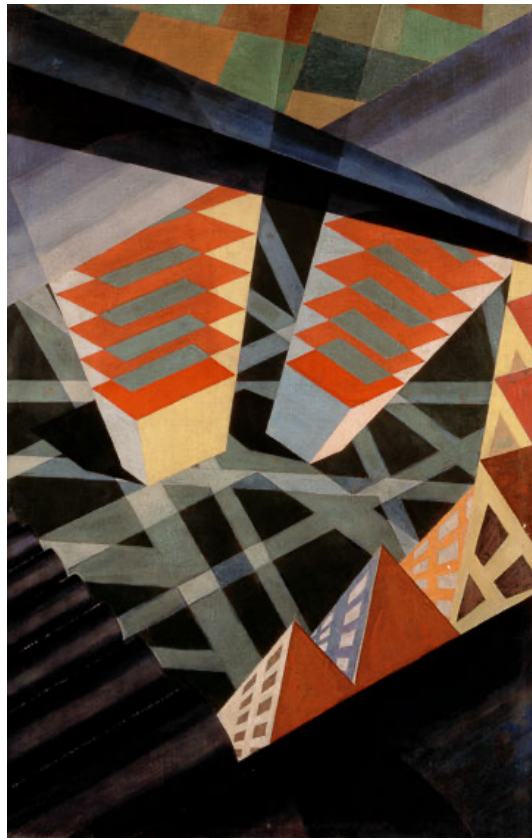


Figure 18: Fedele Azari, *Perspectives of Flight*, 1926.

DRONES IN WAR AND ARTISTIC RESPONSES: MACHINE VISION, SURVEILLANCE, ANXIETY

Although military flight and aerial imaging technology continued to advance after World War II, the Wars in Afghanistan and Iraq marked another major technological shift in aerial warfare: the use of Unmanned Aerial Vehicles (UAVs or “drones”). I will use the term “drone” in this text, which is a generic term referring to a variety of unmanned aerial vehicles with different features. Despite differences in technical components, all drones are defined as such by the following shared features: the ability to be remote-piloted, a number of sensors which gather information about the environment the drone surveys and its position related thereto, and actuators or mechanical components that allow the drone to move. Of course, “unmanned” refers to the absence of a human pilot within the aircraft. Although there is still a human component to piloting large military drones, a computer significantly mediates the relationship between the human and the aircraft. The drone sensors gather data about the environment, which the pilot sees through a computer screen in a remote location. Pilots analyze that data and make decisions on how to direct the aircraft’s movements and actions. There are, in fact, drones

that remove the human element almost entirely; they are programmed to reach a final destination, to which the drone auto-navigates using GPS coordinates.⁶¹



Figure 19: An MQ-9 taxiing in Afghanistan, 2007, US Air Force, Accessed November 25, 2018.

Although drones are emblematic of the 21st century, unmanned aviation was not a 21st century concept; in fact, these contemporary drones have their origins in the Flying Bomb in World War I. Versions of remote-controlled surveillance aircrafts have been deployed by militaries around the world since World War II, and the United States military developed and implemented laser guided munitions in the Vietnam War. These technologies continued to develop throughout the Cold War. The present armed Predator and Reaper drones used largely by the U.S. and U.K. are derived from those developed in Israel in 1973 for intelligence-gathering and subsequently for targeted airstrikes in the

⁶¹ “The Drone Primer: A Compendium of the Key Issues,” (Center for the Study of the Drone, Bard College, 2014), 3.

Middle East. On September 12, 2001, in response to the terrorist attacks on the World Trade Center and the Pentagon the day prior, the United States military deployed armed drones for the first time when they sent them into Afghanistan.⁶² Armed drones have since been used throughout the Middle East for surveillance and targeted killing of suspected terrorists and affiliates, as well as for domestic surveillance within the United States.



Figure 20: An MQ-1 Predator, armed with AGM-114 Hellfire missiles, piloted by Lt. Col. Scott Miller on a combat mission over southern Afghanistan, US Air Force / Lt. Col. Leslie Pratt.

⁶² “The Drone Primer,” 5; and Richard M. Clark, “Uninhabited Combat Aerial Vehicles: Airpower by the People, For the People, But Not with the People,” (Air University Press, 2000), 7.

If World War I and its flight technology signified a world transitioned into modernity, the wars in Afghanistan and Iraq signify a postmodernity in which societies – and war – are increasingly defined by a constant state of change through endless stream of information, media, and technology. In the United States and Europe, the drone is especially emblematic of and plays an important role in this postmodernity because of its geopolitical implications, and its presence in media, popular culture, and commercial usage. Like planes of World War I, drones impose power through panopticism, but do so with anonymity. Largescale military drones mechanize war through advanced automation and remove the human element from the act of war even further than the aircrafts of World War I. In drones, the pilot is completely eliminated from the aircraft and their frame of vision narrows to a digital image on a computer screen. They use their sensors to surveil, gathering visual information about the environment they record. This intelligence is analyzed from afar by the remote pilot. The surveillance patterns recorded by the drones are used to draw conclusions about where to send in airstrikes.⁶³ In the wars in Afghanistan and Iraq and subsequent military activity in the Middle East, these strikes have typically been targeted at terrorist groups. Because these groups are not a state military and operate in plain sight, indistinguishable from civilians, drone pilots rely on this surveillance to determine patterns of behavior, movement, and identity and location of the enemy target. Once a location is determined, the remote pilot can send in

⁶³ “The Drone Primer,” 5.

an airstrike while remaining invisible and maintaining their physical and empathetic distance.

If aerial reconnaissance and aerial bombing in World War I caused a significant shift in vision and power, the drones in the wars of the 21st century drastically increase the illusory sense of limitless vision – and thus limitless power – the pilot has. Pilots are simultaneously empathetically disengaged from actions on the enemy below and given a false sense of dominion over the entire world below with their all-seeing drone-eye.⁶⁴ Despite the automated information-gathering of the drone, the rate of human error can also be increased with this inflated sense of power. Because drone pilots' vision is twice-mediated through the drone camera and a remote computer screen, their vision is skewed. Because they rely on this mediated vision to distinguish the enemy and make decisions, they impose a threat to civilians. In fact, throughout the use of armed drones by the U.S. military in the 21st century, there have been numerous incidents of enemy misidentification which resulted in the wrongful deaths of civilians.

Many contemporary artists engage with drone vision and its ramifications in their bodies of work, including British artist James Bridle, whose artwork and writings acknowledge the mediated vision and attempt to make the public aware of the moral implications of military drone usage. He says, "The drone also, for me, stands in part for the network itself: an invisible, inherently connected technology allowing sight and

⁶⁴ S. Bräunert and M. Malone, *To See without Being Seen: Contemporary Art and Drone Warfare*, ex. cat., (St. Louis: Mildred Lane Kemper Art Museum, 2016).

action at a distance. Us and the digital, acting together, a medium and an exchange. But the non-human components of the network are not moral actors...”⁶⁵ Bridle comments on this lack of morality through his *Dronestagram* project, which calls attention to incidents when drone strikes have resulted in civilian deaths. Active from 2012-2015, Bridle maintained an Instagram account that compiled data from the Bureau of Investigative Journalism in the U.K. to determine locations of U.S. drone strikes, and then captured an aerial image of those locations via public digital maps. The artist posted this content to Instagram (and cross-posted on Twitter and Tumblr platforms) with captions giving information about the strike, including location, casualties, and any other pertinent details. Although Bridle no longer posts to this account, it still exists on the Instagram platform and serves as a kind of archive of drone strikes.

⁶⁵ James Bridle, “Under the Shadow of the Drone,” *Book Two*, October 11, 2012, <http://booktwo.org/notebook/drone-shadows/> (accessed February 9, 2020).

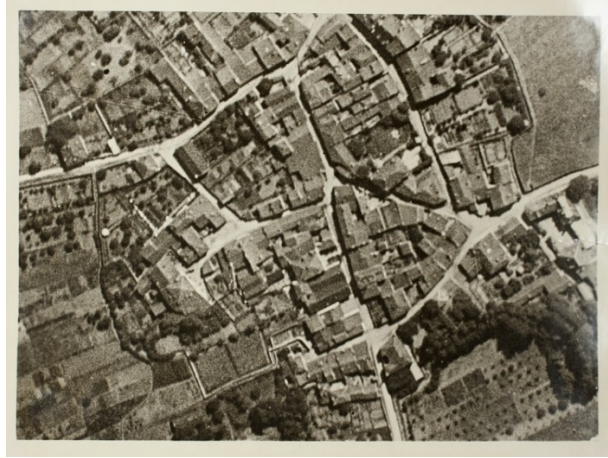


Figure 21: Edward Steichen, Plate 12. Enlargement of small white square on preceding plate, 1918, *WORLD WAR I ALBUM*, Gelatin silver print, Art Institute of Chicago, Gift of William Kistler, 1977.687.



Figure 22: James Bridle, *Dronestagram*, screenshot.

Through this artwork, Bridle makes public the aerial images that drone pilots see from their screens. Because the images are screenshots from digital maps, they resemble aerial reconnaissance photographs like those taken by Steichen and the American Expeditionary Forces aerial reconnaissance photographers in World War I. But unlike those photographs seen and taken by the photographer's human eye, Bridle uses images that represent those seen and taken by the drone's "machine eye." Like Nevinson, Bridle also attempts to remind viewers of the human lives affected beyond the distant aerial image, but he does so by emphasizing the automated technology of the drone.⁶⁶ If the familiar, grounded, horizontal perspective was upended with the arrival of the aerial perspective in the 20th century, the notion of perspective is changing even more drastically in the 21st century. Now, humans are increasingly removed from the act of seeing and rely on technology to see for us. Bridle calls this "machine vision." He discussed this concept in his 2019 podcast series NEW WAYS OF SEEING on BBC Radio 4:

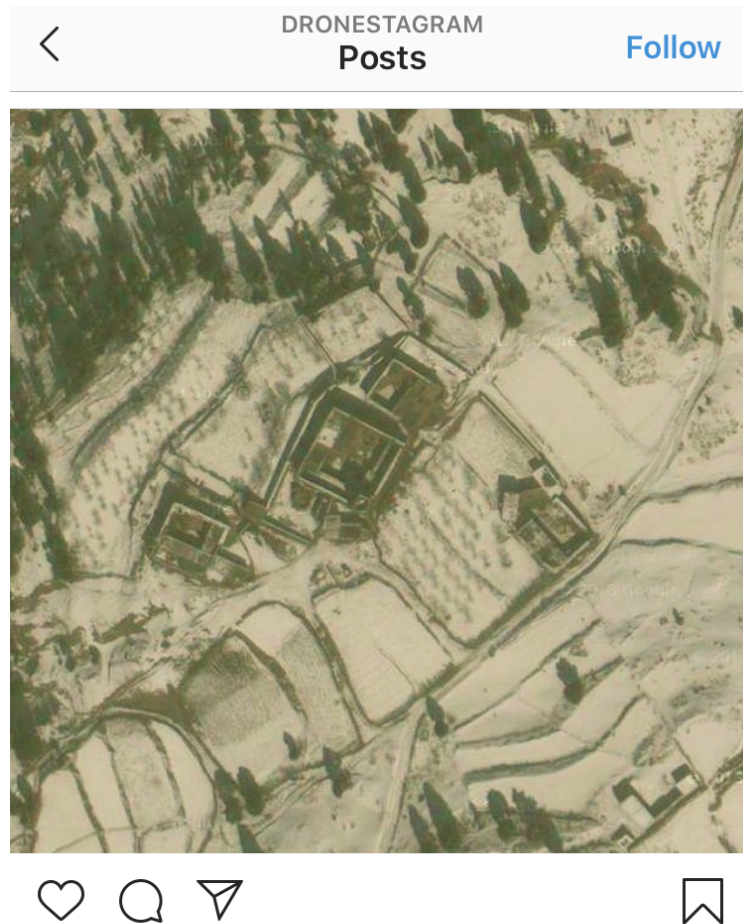
While we might have expected the incredible availability of images and information online to allow us to see more clearly what's happening – and to act accordingly – in fact, the opposite is true. The more images we see, the less we know. The result is fear, confusion, and often anger... Another strange thing about images today is that it's no longer just humans who produce and look at them. Increasingly, machines are making images and looking at them too. The advent of digital images changes not just how we see the world, but how the world sees us.⁶⁷

⁶⁶ "James Bridle: Dronestagram," *Aperture*, no. 214 (2014): 102–7.

⁶⁷ NEW WAYS OF SEEING with Artist James Bridle, Ep2: "MACHINE VISIONS", BBC Radio 4, Wednesday 24th April 2019, 8'56".

Living in an age of digital technology and an inundation of information available at all times can be destabilizing, and as Bridle points out, often the more we see, the less we know because there is too much information to humanly compute. Because of this, 21st century Western societies in particular come to rely more and more on automation and place significant trust in machine vision. This surrogate sight can be typified as the “scopic regime” of 21st century western societies.⁶⁸ This destabilization is present in drone vision, and by removing the human eye and relying on machines to discern information for us – especially in war – human actions taken based on that information can have devastating ramifications, as illustrated in *Dronestagram*.

⁶⁸ “Scopic Regime” is a media term that is defined as “an overarching experience of the gaze, as enacted on an entire culture.” This term is derived Jacques Lacan’s theories which distinguish the roles of the eye and the gaze.
(<https://csmt.uchicago.edu/glossary2004/scopicvocative.htm>)



138 likes

dronestagram October 7, 2014: Two or three missiles hit a house reportedly belonging to an alleged Taliban commander, Mustaqeen. 4 to 7 people were killed; it is not know whether Mustaqeen was present or a casualty. [#drone](#) [#drones](#) [#pakistan](#)

Figure 23: James Bridle, Dronestagram, screenshot.



Figure 24: James Bridle, Dronestagram, screenshot.



Figure 25: James Bridle, Dronestagram, Screenshot.

Importantly, *Dronestagram* was an artistic initiative to facilitate dialogue on important contemporary issues. As *Aperture* Magazine pointed out in the Spring 2014 issue, user comments on *Dronestagram* posts “range[d] from staunch support for the drone war to equally passionate criticism, underscoring the complex moral dilemma posed by this covert, impersonal, unmanned war.”⁶⁹ In the drone wars, artistic responses play a vital role in disseminating information and encouraging dialogue, because they seek to give vision back to the human eye from that of the invisible machine.

Bridle’s series *Drone Shadows* works in conjunction with *Dronestagram*, as it attempts to call attention to the anxieties associated with drone surveillance and strikes from the perspective of individuals on the ground. In this ongoing project, Bridle paints a 1:1 outline of Predator/MQ-1 and Reaper/MQ-9 drones in populous urban areas. The outlines are bright-white and are eerily reminiscent of the outline where a dead body had once been at a crime scene. He paints them on busy street corners and pedestrian thoroughfares, reminding passersby of what could be looming invisibly overhead. Bridle’s *Drone Shadows* are meant to interrupt people in their daily lives, to catch them off guard on their normal route home. In his description of the project, he states, “We all live under the shadow of the drone, although most of us are lucky enough not to live under its direct fire.”⁷⁰ The outlines of his *Drone Shadows* impose a sense of anxiety in individuals, especially in those who do not live under the direct fire of drones, but whose

⁶⁹ “James Bridle: Dronestagram,” *Aperture*, 102

⁷⁰ Bridle, “Under the Shadow of the Drone.”

nations' militaries impose this threat on others. The *Drone Shadows* make known the power of the drone, and put the (often unsuspecting) viewer in place of the targeted enemy below, or perhaps someone misidentified, or simply in the wrong place at the wrong time. Together, Bridle's two bodies of work discussed here attempt to build a visual narrative of distant and invisible drone wars to encourage a dialogue about and questioning of the automated military actions taken by the western world.



Figure 26: James Bridle, *Drone Shadow 004*, June 2013, for "A Quiet Disposition" at The Corcoran Gallery of Art.



Figure 27: James Bridle, *Drone Shadow 001*, London, February 2012, with Einar Sneve Martinussen of *Voy Oslo*.



Figure 28: James Bridle, *Drone Shadow 006*, 2013 A *Drone Shadow* in Brixton, London, for the premiere of Jeremy Scahill's investigative documentary *Dirty Wars*.

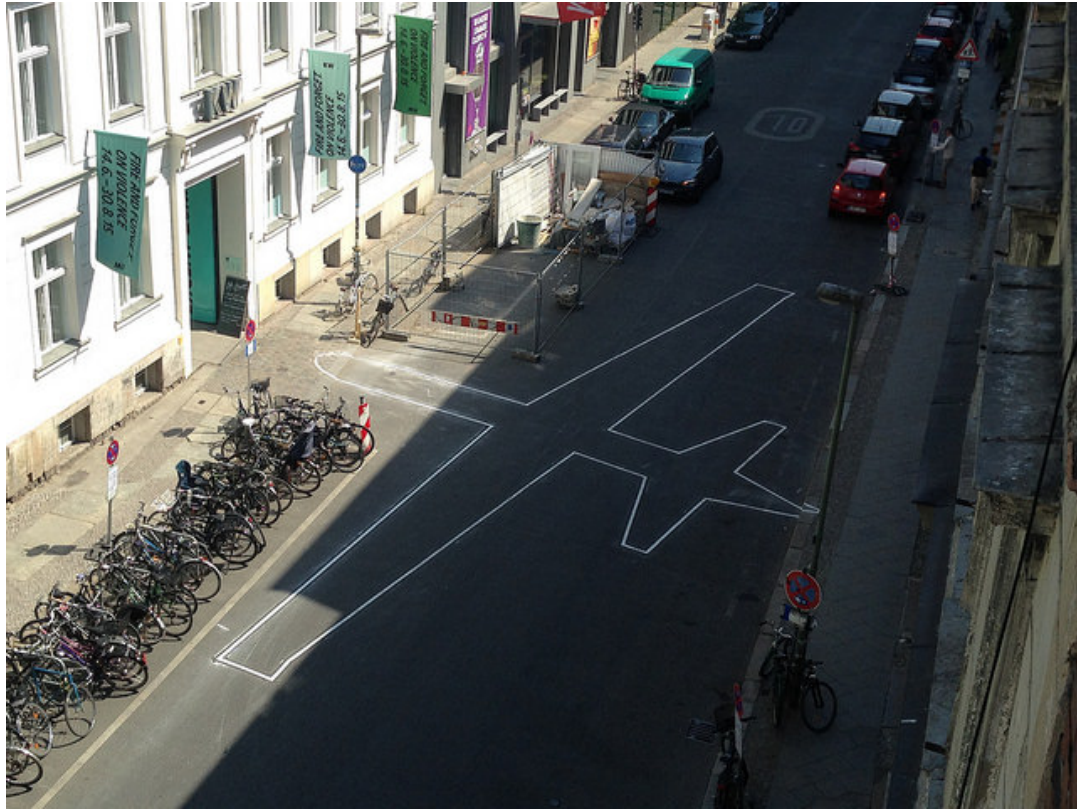


Figure 29: James Bridle, *Drone Shadow 00*, June 2015. Installed at KW Berlin by James Bridle and KW, for the exhibition *Fire and Forget*.

Like Bridle, Belgian photojournalist Tomas Van Houtryve puts the viewer in place of both the drone pilot and the target. In his 2013 series *Blue Sky Days*, he flew drones over bustling cities and suburban neighborhoods and took aerial film and photographs of people engaging in their daily activities. By focusing the camera eye on unsuspecting civilians going about their routines, he too attempts to humanize the aerial (drone) view. Unlike Bridle, who invokes drone vision through screenshot images of publicly available digital maps, van Houtryve piloted and took photographs with a small

commercial drone. He modified the drone with the specific intent to mimic the surveillance carried out by U.S. military drones:

Last year [2013], I started to explore photography's dark side, hoping to engage in the debate about how imaging technology is changing the nature of personal privacy, surveillance, and contemporary warfare. I started by buying my own consumer drone, and I was surprised by how easy it was to acquire. Hobby shops and online retailers sell small drones equipped with GPS receivers for a few hundred dollars. With a bit of tinkering, I was able to add a high-resolution camera and a system for transmitting live video back to the ground—a greatly simplified version of the system that American pilots use to guide military drones like Reaper and Predator over foreign airspace.⁷¹

As the photographer, van Houtryve also puts himself in a position of questionable ethics by flying drones over and taking images of unsuspecting subjects, which magnifies the even greater ethical issues of widespread governmental domestic surveillance via drones. In this series, van Houtryve intentionally flew his drone over areas within the U.S that the government surveils with drones, like the border of the United States and Mexico. He also flew over scenes of civilian activities that mirrored instances of U.S drone strikes on civilian areas in the Middle East. For example, *Figure 30* depicts a wedding ceremony in Philadelphia, which refers to a U.S drone strike of a wedding convoy in Yemen in December 2013 that left a dozen people dead – including the bride – and fifteen more injured.⁷² The viewer's position is unsettlingly ambiguous. They are given the drone's-eye view as they observe the figures from above whose foreshortened bodies more

⁷¹ Tomas van Houtryve, *Tomas van Houtryve: A Sky Full of Cameras*, National Geographic, August 15, 2014, <https://www.nationalgeographic.com/photography/proof/2014/08/15/tomas-van-houtryve-a-sky-full-of-cameras/> (Accessed January 20, 2020).

⁷² van Houtryve, *A Sky Full of Cameras*.

closely resemble a pattern or points on a map than individuals, but they are also put in the place of the people photographed. As the viewer looks more closely at the image, they can distinguish individual features from the photograph and notice the young girl is looking straight up at the drone camera, confronting the viewer and inserting a sense of humanity and innocence into the frame. Unlike the drone eye that reads pattern, the human eye reads empathy and a recognition of self.



Figure 30: Tomas van Houtryve, Blue Sky Days, 2013.

Research is an important part of van Houtryve's practice, and for this series, he referenced reports by the Bureau of Investigative Journalism in London, the same source with whom Bridle worked. Van Houtryve may have looked to Bridle's work as well. A *Dronestagram* post on December 13, 2013 shares an image of the wedding convoy in Yemen and discloses the event (*Figure 31*).



Figure 31: James Bridle, Dronestagram, screenshot.

Another image from van Houtryve's series depicts an aerial view of a playground. The sun casts long shadows of the fence, playground equipment, and the figures, skewing a discernable sense of depth or space. The shadow-laden image recalls the chart used in World War I to teach the American Expeditionary Forces reconnaissance photographers how to read shadows to determine the position of the targets and landscape below (as seen in *Figure 4*). But in van Houtryve's image, the eerie shadows of the figures are a reminder that the abstracted shapes the pilot sees in the frame are individual human lives. The shadows are presented almost like ghosts. In fact, Van Houtryve made this image as a sort of memorial to children killed by drone strikes.



Figure 32: Tomas van Houtryve, Blue Sky Days, 2013.

He says that the location is, “A playground seen from above in Sacramento County, California. The London-based Bureau of Investigative Journalism estimates that over 200 children were killed in drone strikes in Pakistan, Yemen, and Somalia between 2004 and 2013.”⁷³ In this series, van Houtryve confronts viewers with a contemporary, dystopian *memento mori*, reminding us of the implications of drone usage and the subsequent notion of death and destruction in the midst of daily life. Even the title of the series, *Blue Sky Days*, is a reference to death. It is taken from a quote by a Pakistani boy, Zubair Rehman, whose grandmother was killed in her garden by a drone strike. He said, “I no longer love blue skies. In fact, I now prefer gray skies. The drones do not fly when the skies are gray.”⁷⁴ This morbidly ironic association of blue, sunny skies with death only emphasizes a heightened sense of anxiety and fear of the consequences of drone vision.

The black and white photographs of the *Blue Sky Days* series recall black and white images and footage taken by military drones, like those used and edited by American artist and geographer Trevor Paglen for his video piece, *Drone Vision* (Figure 34). In the video still on Paglen’s website (the video itself is not available) is a grainy black and white image of what appear to be half a dozen figures moving through a hilly terrain. The figures are indicated by the crosshairs on the screen that targets them. Accompanying information including date, time, and coordinates are also shown on the

⁷³ van Houtryve, *A Sky Full of Cameras*.

⁷⁴ van Houtryve, *A Sky Full of Cameras*.

screen. Like Bridle and van Houtryve, Trevor Paglen uses digital media and directly engages with drone activity to make the viewer aware of drone vision. Paglen sourced actual drone video footage for this piece. He states:

The source material for this video was intercepted by an amateur “satellite hacker” from an open channel on a commercial communication satellite over the western hemisphere. A large number of American surveillance aircraft and drones around the world are remotely piloted via communications satellites by ground-based operators in the United States. The control and video links between aircraft and pilot are often left unencrypted to reduce the latency inherent in the system.⁷⁵

In Paglen’s own words, as an artist, he is concerned with “learning how to see the historical moment we live in and developing the means to imagine alternative futures,” and his work deals with secrecy, optics and vision, government, and military.⁷⁶ Drones are an important subject matter in Paglen’s work because they are a technology definitive of the contemporary moment, which engages with all of these topics, and whose current and future uses are under scrutiny.

⁷⁵ Trevor Paglen, *Drone Vision*, 2010. <http://www.paglen.com/?l=work&s=drones&i=10> (accessed January 20, 2020).

⁷⁶ Trevor Paglen, *Biography*, <http://www.paglen.com/?l=biography> (accessed January 20, 2020).



Figure 33: Trevor Paglen, *Drone Vision*, Video intercepted from a communication satellite (edited), Video Still, 2010.

Along with revealing drone vision to the viewer, Paglen's ethereal landscape photographs also give the viewer glimpses of drones in the sky. While Nevinson and the Futurists wanted to emphasize the speed, dynamism, and power of airplanes through the use of geometric shapes and strong, converging lines, Paglen ironically calls attention to drone technology through atmospheric images of nature. At first glance, they may even seem calming. However, these photos offer a hauntingly beautiful image and unsettling

reminder that the deadly, nearly-invisible aircrafts are ever-present. The photographs intentionally de-emphasize the drone. Upon first glance and perhaps without seeing their titles, the viewer will likely not see the drone, but once they spot the miniscule, ominous, black speck, the sense of scale becomes apparent; the scale of the sky vastly expands and the viewer realizes just how small and undetectable an armed drone can be. This nearly indistinguishable speck creates a deep sense of ominous, looming anxiety about the image. The image at once becomes much darker, like a picture of the calm before the storm. Although these works are digital images of the sky, they recall the sublime skies that encompassed the beauty, awe, and terror of nature in 19th century Romantic paintings⁷⁷. But unlike the Romantic painters who emphasized that what is man-made will be reclaimed by nature, Paglen's photographs emphasize the destabilizing reality of technology's imposed dominion over nature.

⁷⁷ Scholarship on 19th century Romantic painting, such as that of Angela Miller, extensively discusses the concept of the sublime in nature.



Figure 34: Trevor Paglen, Untitled (Reaper Drone), C-Print, 2010.



Figure 35: Trevor Paglen, Untitled (Reaper Drone), C-Print, 2010.

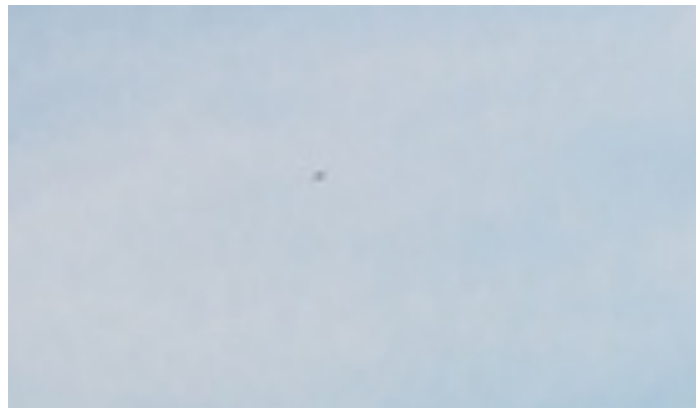


Figure 36: Trevor Paglen, Untitled (Reaper Drone), C-Print, 2010 (detail).



Figure 37: Trevor Paglen, *Untitled (Predator Drone)*, C-Print, 2010 (detail).



Figure 38: Trevor Paglen, *Untitled (Predator Drone)*, C-Print, 2010.



Figure 39: Trevor Paglen, Untitled (Predator Drone), C-Print, 2010.



Figure 40: Trevor Paglen, Untitled (Reaper Drone), C-Print, 2010.

James Bridle, Tomas Van Houtryve, and Trevor Paglen are among the most prevalent artists who currently create conceptual artwork through photography and digital media to investigate drones as weapons and means of surveillance. By co-opting drone vision and using digital tools like maps, social media, or drone cameras themselves, these artists explore how drone usage affects the human population, both those fighting in war and civilians going about their daily lives. They emphasize the pilot's physical and empathetical distance caused by the pilot's panoptic vision: mediated by a digital screen, it is a narrow frame of vision that elicits an overwhelming sense of omnipotence. The artists at the same time seek to create an anxiety in the viewer to visually represent the contemporary societal anxieties surrounding technology that surveils, tracks, and destroys, all while remaining unseen and nearly undetectable.⁷⁸ And images and information from drone surveillance is classified, so the drones themselves and the information they gather is both unseen. Like C.R.W. Nevinson's artistic responses to World War I, these contemporary artists' responses to drone warfare and surveillance adopt the new visual perception made possible by flight and imaging technologies. Through their artwork they point out the complexities and consequences of this technology using its own medium. But importantly, the artists reinsert a sense of humanity into the field of vision that is increasingly removed as technology advances. The artists do not just give the viewer the power of the gaze, but by placing human figures into the work or by provoking the viewers' anxieties and empathies, they instead

⁷⁸ Bräunert and Malone.

make the viewer vulnerable as both the subject and object of the work. They are given a glimpse of the power of drone vision, but are also inescapably subject to it.

CONCLUSION

World War I and the wars in Iraq and Afghanistan not only marked major societal shifts in technology, media, and military conflict, but they also ushered in new eras of visual perception, and subsequently significant artistic responses that engaged with these moments of change. Artists working in both periods used visual media to co-opt their respective newly introduced aerial perspectives. The artists discussed here engage directly with the aerial view and imaging technology. In World War I, Steichen was an artist and soldier who understood the power of images as both art and functional objects, and innovated aerial reconnaissance photography to make a major contribution to the war. As a volunteer ambulance driver in World War I, Nevinson first experienced the horrors on the ground; later as an official war artist, he accompanied pilots in flight, experienced the aerial view, and then utilized this new perspective in his artwork to reveal its limitations and dangers amongst the feeling of exhilaration it elicited. In Iraq and Afghanistan or the ongoing “war on terror,” James Bridle, Tomas van Houtryve, and Trevor Paglen all use digital imaging technologies – and in some cases drones themselves – as their artistic media. Like Nevinson, these artists also reveal the limitations and dangers of their contemporary aerial perspective: drone vision.

Artists' responses to changes in their societies and world around them, such as shifting vision, new technology, and major conflicts, are an important tool for interpreting and more deeply understanding complicated socio-political histories. Artists often contribute a visual voice to their contemporary cultures by representing, questioning, and reinterpreting current issues and significant changes. This creates an important dialogue about the state of the societies in which they live, but it also creates vital historical records. Artists and their work are a key element to understanding history, especially because they often present perspectives or represent groups that have been overlooked or undervalued in traditional historical narratives.

Although World War I and the wars in Iraq and Afghanistan are just two of the many formative moments of change in the last 100 years for western societies, they stand out as two pivotal points in which military conflict, rapidly-advancing technology, and widespread shifts in vision fundamentally changed the way people related to and interpreted the world around them. Although the artists discussed in this paper are just a small group of those who engaged with these particular moments of change, they seek to reveal the ways that physical shifts in visual perception can have dangerous cultural implications. These artists used new fields of vision and the technologies that bore them to grapple with their contemporary realities, and they contribute to a public dialogue about war, technology, and vision by reinserting traces of the human in the frame where automation and aerial vision have removed it.

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BIOGRAPHY

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