National College of Art and Design

Fine Art Painting

Drone Art: An Examination of Contemporary Practices

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DECLARATION OF OWN WORK

School of Visual Culture

I declare that this **Critical Cultures Research Project** is all my own work and that all sources have been fully acknowledged.

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INTRODUCTION

What happens when new technologies such as drones enter the gallery space? How does this manifest into contemporary discourse, and is there a place in art for weaponised technologies? Unmanned aerial vehicles over the past two decades have developed vastly as an emerging technology. For the sake of clarity, in this essay, I will refer to unmanned aerial vehicles (UAVs) by their more commonly used name which is drones. Originally designed for use in a military context, drones are now widely available to purchase on the civilian market. In this day and age, they are used for an abundance of purposes from agriculture to providing humanitarian aid to tracking weather patterns.

Drone art makes an important contribution to debates around drone warfare and surveillance. Drone art can be loosely defined as art in which drone technology can be used for artistic purposes or be addressed by the art. "Thinking drone power through art and thinking art through drone power prove to be inseparable tasks." (Stubblefield, 2020, p.11). The fusion of drones for military use and everyday, civilian life has led to these two simultaneous definitions of drone art.

Reflection of the entanglement between military and civilian media in the twenty-first century can be seen across artistic disciplines, such as in Wilhelm Sasnal's painting *Gaddafi 2* (2011). The painting is based on mass-media-spread mobile phone footage of the execution of Libyan dictator Muammar Gadaffi. An image once

reserved for the case files of a military operation suddenly is splashed across every corner of the internet. Sasnal uses the traditional language of paint to juxtapose against the non-traditional, low-quality resolution of the phone footage. Similarly, images of military drones are adapted such as in Mahwish Chisty's work *Reaper* (2015) which uses traditional painting techniques such as gold leaf as a method of subversion. Drones have particularly become a symbol of this entanglement compared to other technologies. How does drone technology become redeployed from an instrument of war to a product of a civilian market and how do artists respond to it?

Drone technology in art is often associated with negative affiliations surrounding the ethics of modern warfare, particularly when drone art addresses the symbol of the drone itself. Yet, there is also a positive side to drone art in its use for artistic purposes. It has a powerful ability to create innovative photographic compositions and be incorporated into performance art while at the same time remaining critically reflective of the technology's origins. It has "democratised the skies" (Haner, 2017, n.p.) democratising the usage of the aerial viewpoint and making photography a more accessible medium for artists.

"Drone visuals are rapidly becoming part of our everyday visual experiences, generating images that differ from traditional visual conventions and produce unexpected perspectives of the world" (O'Hagan, 2022, n.p.).

From performance art to film and photography, artists and activists are re-appropriating aerial perspectives of drone power and control to develop a new vernacular of ethics and aesthetics.

In this essay, I will investigate how are drones used in contemporary art. I will examine different contemporary art practices to further understand and define the genre of drone art. This essay is organised around a series of three chapters. Chapter one will present drone art and insurgent aesthetics. I will analyse the work of Trevor Paglen, an artist who represents drones and the concept of the "weaponised gaze" in his practice. The second chapter will examine drones as a means of capturing photography/film. An example of a film titled *Desiring Unspeakable Entropy*, by Seiha Kurosawa will be situated in the context of using the drone as a technique for artistic purposes. In particular, examining drone art in the context of landscape art aesthetics and aerial perspective. As part of the research methodology for this section, I conducted an interview with Rachael Gilbourne who assisted in co-commissioning this film for the Irish Museum of Modern Art. I will draw a comparison to a similarly-themed contemporary video-art piece titled *Secretion* by Willie Doherty which does not use the drone as a technique. Finally, the last chapter focuses on performance art and drones, and the broader discussions surrounding transhumanism and the integration of new drone technologies as an extension of the human body. With this essay, I hope to add to the growing research on drone art specifically in the context of film and photography. By researching this topic in detail, I aim to propose a discursive view and understanding of the appropriation of drone technology in contemporary drone art practices.

1 - PROTESTING MILITARY DRONE USE AND

MASS SURVEILLANCE

"Blank spots on maps outline the things they seek to conceal."

Trevor Paglen, 'Blank Spots on the Map'

A well-documented use of the drone in contemporary art is the utilisation of the image of a drone to protest its military use and connections to mass surveillance.

Particularly in the early 2000s prior to drones becoming commercially available, drone ownership was strictly limited to military or governmental bodies. The identity of the drone became a symbol of disquiet with the manner in which drone technology was being used to wage war against and survey civilians (Stubblefield, 2020). Wars such as the Iraq War which took place from 2003 to 2011 showcased U.S. advancements in UAV technology. UAV technology was employed by the U.S. army in Pakistan, Iraq and Afghanistan as a means of eliminating targets remotely thus reducing casualties of personnel. (Page, Williams, 2021). However, the consequences of utilising this technology did not reduce so-called "collateral damage" as originally perceived - the impact of these drone strikes involved many thousands of civilian casualties. (Coyne, 2018, p. 56).

Artists such as Elin O'Hara Slavick responded to drone warfare and US bombing campaigns in the Middle East with a series of works for example, *Bomb After Bomb: A Violent Cartography* (Kapadia, 2019, p. 97 - 101) as a form of artistic protest. In

this series of works, O'Hara Slavick depicted US bombing sites through references to surveillance imagery, battle plans, maps and media footage through the medium of ink and gouache paint. She rendered the sites as bleeding and destroyed, in her cartographic-style book on the series presenting a brief history of the place alongside the image. Working through the technique of drawing and painting instead of photography, "ink dropped onto wet paper like bloodstains on damp clothing. When it dries this becomes the foundation upon which to tell a violent story" (O'Hara Slavick, 2007). By directly using a technique and colour palette that references blood, O'Hara Slavick creates a powerful critique of the horrors of war, referencing her political viewpoint on US drone strikes and bombing campaigns.

One definition of drone art is; art that addresses the concept of the drone in the artwork. Artists that have represented the symbol of the drone in their work include James Bridle with *Drone Shadow 001* (2012) and Sam Durant with *Untitled* (2016). They position drone imagery in everyday, public spaces to attract the public's attention and spark discussion about the ethical implications to be considered when using the technology.

Fig. 1: Durant, Sam

Untitled (Drone), (2016)

Fibreglass Sculpture

1.1   AN ANALYSIS OF THE WORK OF TREVOR PAGLEN

Trevor Paglen is an American artist, author and geographer whose work addresses themes of mass surveillance and data collection. Paglen uses the drone as an icon in his work, representing mass surveillance and invisible landscapes. He is determined to capture the unseen political geography of contemporary times. In particular, his series of photographs, *Drones* and *Limit Telephotography* focus on photographing the activities of secret military facilities in remote areas of the American West. He uses a technique he developed that he has named 'limit

telephotography', which involves using telescopes with focal lengths between 1300mm and 7000mm to enable him to capture sites from a considerable distance as such facilities are strictly off-limits to civilians.

As proposed in my introduction, one definition of drone art is art that critically addresses drone technology. In his practice, Paglen uses the image of the drone as a means of representing and recontextualising the process of visual targeting enacted by military drones.

Drones are a series of photographs taken of the skies in the Nevada desert. Paglen recalled in an interview with Dazed magazine becoming interested in drones as a subject as far back as 2003; "if you were driving through Nevada you would sometimes see them. I was thinking about the colonisation and transformation of the sky as an aesthetic thing, but also a political thing." The aesthetic of these photographs recalls the imagery of traditional landscape art and takes it as a point of departure, such as the atmosphere, subjects and palette of Romantic painters in particular JMW Turner. Paglen stated in an interview with Tim Adams for the Guardian newspaper in 2017, "for me, seeing the drone in the 21st century is a little bit like Turner seeing the train in the 19th century." He has frequently referenced the art of Turner as inspiration for his photographs. It also recounts work by photographers such as Ansel Adams, an American landscape photographer known for his popular images of the American Midwest and Alfred Stieglitz who most notably was an early pioneer of cloud photography.

Fig. 2: Paglen, Trevor

Untitled (Reaper Drone), (2015)

Pigment print, 48 x 60 in.

Fig. 3: Adams, Ansel

Clouds, Sierra Nevada, California, (1936)

Gelatin silver print, 4 ¼ x 5 ¾ in.

Although the images draw from classic landscape photography, they are deliberately unfocused and sometimes even blurry due to the long-distance range. The faraway visual of the drone becomes barely visible, "a tiny dot hidden in a gorgeous photo of the Nevada sky" (Brown, 2018). The elusiveness of the drone allows the viewer to become both a seeker and an observer (Maxwell, 2021). The nature of the photograph is reflected as a play on words in the title, *Untitled* referring to its amorphous quality yet in the brackets *(Reaper Drone)* clearly stating what the subject is. Paglen situates present-day concerns in a familiar format, which aids in the unsettling quality of the drone's image when the viewer is made aware of the title and its presence.

Through drone art, we as viewers are demanded to think of the development of information technologies and the evolution of military strategies. This is due to the nature of the artworks themselves and their presentation. As Paglen stated on *Drones,* "What happens when we start thinking about the practice of photography as embodying the critical moment in the work? In other words, what if the "fact" of photographing something is the essential critical point of a work?" (Paglen, 2011).

In comparison to *Drones*, Paglen's series *The Other Night Sky* is another ongoing series of work which seeks to track and reveal hidden military technological operations in this case satellites. Working with amateur satellite observers, Paglen takes photographs using a combination of cameras, computer-guided mounts and telescopes. These satellites are not typically recognised by the U.S. government and are highly classified American spacecraft. The precision required to capture these

photographs recalls military targeting and the concept of the "weaponised gaze" (Stahl, 2018). The "weaponised gaze" in this case, is the footage captured from the point of view of the satellite. Much of Paglen's work deals with the "weaponised gaze" from satellites and drones; in *Drone Vision* (2010), Paglen hacked the live surveillance footage from a military drone. Yet in the case of *The Other Night Sky,* rather than the satellite perceiving the viewer, the viewer is gazing upwards at the satellite - the observed becoming the observer.
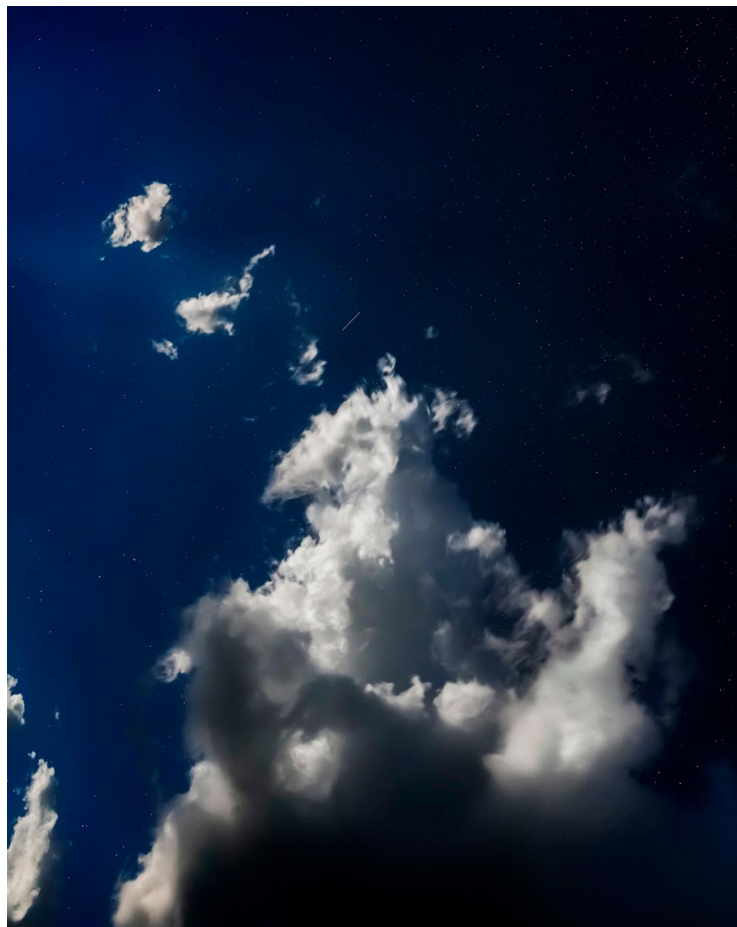

Fig. 4: Paglen, Trevor

INTRUDER 12A in Vulpecula (Ocean Reconnaissance Satellite; USA 274), (2017)

Dye sublimation print, 60 x 48 in.

This is a highly similar approach to Paglen's earlier series *Drones.* A difference is that in terms of the aesthetics of this series, they appear to focus more on the landscape of the photograph as opposed to singularly the subject of the satellite. In contrast to *Drones*, where the only tangible image is that of the drone and even the model of the drone is always directly referenced in the photograph's title.

Paglen is interested in an area of digital visual culture he describes as "invisible visual culture" which is the machine-readable world of images. His practice is not implementing drone technology as a means to create photographs instead, using the visual of the technology itself as a representation of mass surveillance. (Wall and Monahan, 2011). Paglen's photographs and videos give visual form to the almost invisible landscape of mass surveillance and the politics of technological warfare. By using the same medium, Paglen turns the unrestricted use of surveillance photography on itself. Through using drone technology to be emblematic of the constant threat of surveillance, and the "ever-looking" nature of technology in contemporary life, Paglen questions and protests the unchecked governmental use of drones and aerospace technology.

2 - DRONE ART: AN INNOVATIVE TECHNIQUE FOR PHOTOGRAPHY AND FILM

Although drones (or unmanned aerial vehicles) were originally invented as a military technology, they began to be introduced to a broader, civil market around the late 1990s. Previously, aerial photography was captured from helicopters and manned small aircraft before this. It was often a risky, expensive and dangerous means of capturing these types of photographs. The increasingly wide availability of drones for consumers has democratised this photographic technique, making it available at a far lower cost and encouraging its use from a broad range of disciplines. Since the year 2000, drone use in Ireland has been regulated by the Irish Aviation Authority and drone ownership has substantially increased. In the Republic of Ireland alone, there are approximately 22,000 registered drones as of 2021 (Galkin, 2021, p. 7). Drones are beginning to become more regulated for personal use - as of EU Regulation 2019/945 one must register a drone that weighs over 250g and that has a camera. Although the industry is becoming more regulated, this has not yet impacted the increase in drone ownership seemingly. The market in Ireland is projected to grow by 6.54% annually (CAGR 2021-2025) according to the most recent EASA report in 2020.

Drone ownership for commercial purposes is the fastest-rising area of growth. More and more, drones are used for media news reports and television programmes. This new visual culture phenomenon has been reflected within the Irish art discourse. The artist Claire Halpin held an exhibition at the Olivier Cornet Gallery in Dublin in

October 2022 titled *Augmented Auguries.* The title "links the live feed of news and

social media via satellite and drones to the ancient Roman practice of augury - the

interpreting of omens from the observed behaviour of birds and the sometimes

fabricated auspices that could be used to pervert a political course of action" (Olivier

Cornet Gallery press release 2022). In the painting, *Grassy Knoll Revisited* one sees

a depiction of drone footage evidently from a news report as there is a gathering of

people in a protest in the centre of the green. As drone use becomes further

popularised and widely accepted, it will become an increasingly visible influence on
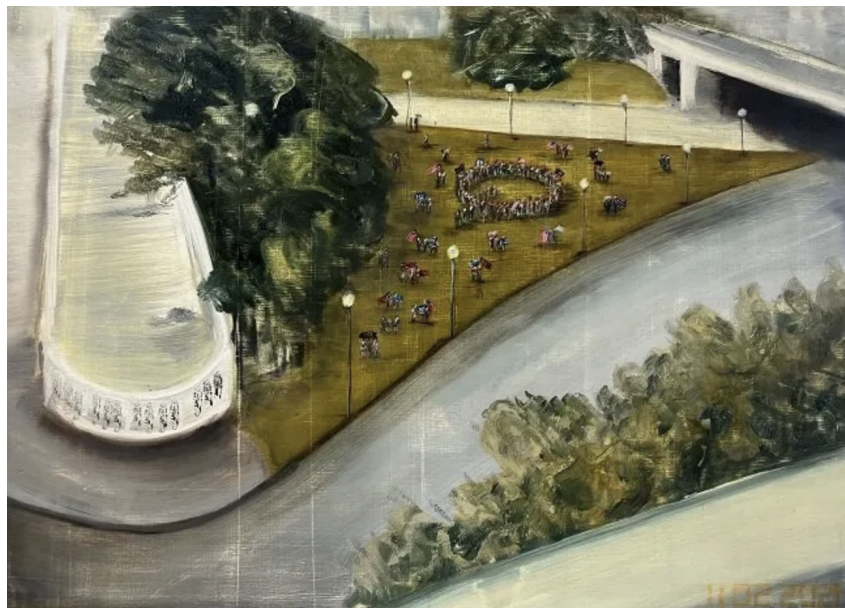
art. (Natale *et al.*, 2017)

Fig. 5: Halpin, Claire

Grassy Knoll Revisited (2022)

Oil on gesso board, 30 x 40 cm

Using drones as a photographic technique has been widely popularised by hobbyists. Online platforms such as 'Dronestagram', a virtual community dedicated to sharing drone photography and YouTube a video-sharing platform are places where people publish their drone footage. Platforms such as Dronestagram are popular enough that a book titled *Dronescapes: The New Aerial Photography from Dronestagram* was published in 2017. Under the hashtag Dronestagram on Instagram, there are over eight million posts published. The recent democratisation of the medium of aerial photography by means of drone technology is a counterpoint to its military origins. To demonstrate the influence of drone technology on contemporary film and photography, and its innovative uses I will now examine my case study and compare it against another film that does not use the drone as a filming technique.

Desiring Unspeakable Entropy (2019) was a multi-channel video installation that was commissioned for the 'Desire' exhibition by the Irish Museum of Modern Art that ran from the 21st of September 2019 to the 22nd of March 2020. *Desiring Unspeakable Entropy* was the product of a collaboration between curator Seiha Kurosawa and the artists Koichi Sato and Hideiki Umezawa. The film visually describes the sacred landscape of the Chichibu region in Japan. Captured by a drone, the region of Mount Bukoh becomes aestheticized like a piece of land art. As part of my research on this film, I interviewed Rachael Gilbourne who is the current assistant curator of the Irish Museum of Modern Art. She was involved in the commissioning of *Desiring Unspeakable Entropy.* This aided in providing insights towards my analysis of this piece of drone art.

At the beginning of the film, the viewer can see the shadow of a drone on the left-

hand side of the film preparing for take-off. The video then pans to various shots of

the mountainside, evolving into a horizonless depiction of the landscape. The sense

of space captured by the tilting quadcopter drone playfully manipulates the viewer's

perception. The medium of the drone has a significant effect on the presentation of

the artwork. Having two channels showing various angles and perspectives of the

landscape demonstrates the versatility of capturing this landscape from above.

Kurosawa on the form of the film stated in an interview with Rachael Thomas the

former head curator of IMMA,

"The elaborate operations of the drone that project overland images as seen from
the sky allowing us to manipulate our impressions of the comprehensive ecological
landscape of the site in an almost playful fashion. This playfulness of the multiple
perspectives triggers our contemporary desire to (visually) "see" the spectacle of
environmental crisis, while our bodies somehow suffer from its vertigo and a sense
of displacement" (Kurosawa, 2019).

 The use of first-person view (FPV) immerses the viewer in the film, allowing it to

trigger their desire to see this spectacle of environmental crisis as Kurosawa states.

The first-person view has become widely part of our visual experience, extensively

used in VR video games to enhance the immersive experience for the player. Drone

photography uses mobility to allow for a first-person view in areas that otherwise

would be inaccessible. Reflecting on the previous chapter, by its very nature this

conversely enables remote viewing targets for surveillance. Yet, the use of drone art

in this film to reflect on environmental issues references the positive uses of drones

for wildlife monitoring and geographic mapping of vulnerable ecosystems.

Fig. 6: Kurosawa, Seiha

Desiring Unspeakable Entropy, (2019)

Multi-channel film installation

The type of perspective used in this film in the context of drone photography is referred to as the "top-down view" or verticality. (O'Hagan and Serafinelli, 2022). This type of perspective is also known as the "God's eye" view. It is similar to the perspective captured by satellite viewpoints in the sense it is from above the subject, however as the drone is situated closer to the site being recorded it allows for higher levels of detail in the field of vision. Many of the shots from the film depict the mountainside, focusing on close-up views of the limestone mining sites.

Historically, the German sociologist Georg Simmel in his essay on the philosophy of landscape sums up the concept of landscape as;

"as for landscape, it is absolutely essential for it to be delimited, bound in a momentary or permanent field of vision; even if its material basis or its individual pieces qualify as nature per se - imagined as 'landscape', it demands perhaps being-for-itself, a singular characterising severance from that indivisible unity of nature" (Simmel, 1913, p. 472).

If we accept this interpretation of landscape, how are we to explain the unfixed, distanceless and converging nature of the drone landscape? A landscape that is not limited by human perspective, not tied to a horizon and is visible in all directions. It becomes incredibly abstract and defies traditional spatial orientation. The use of the drone to create this particular film is highly innovative, allowing for a discussion on the modern aesthetics of landscape and the exploitation of natural resources (in this case, to create cement).

In comparison to this film, I give the example of the short film *Secretion* (2012) by Willie Doherty. This film was shot on a high-definition film camera rather than a drone and uses visual story-telling methods to present themes of landscape and memory as seen in other works by Doherty such as *Ghost Story* (2007). *Secretion* was created for documenta 13 and depicts the landscape of Kassel in Germany, where documenta is held every five years. It features a voiceover with a spoken text in one section, hauntingly telling the tale of a sickness that is contained in the shown landscape. Although Doherty similarly uses close-up views (in this instance of woodland mushrooms) as a means of creating stills of an entropic world, we are given a linear perspective of the landscape rather than an aerial or top-down perspective.

Fig. 7: Doherty, Willie

Secretion (2012),

HD video, colour, sound, 20 minutes

Secretion also uses the power of language rather than the technique of filming to

communicate its story. *Desiring Unspeakable Entropy* features audio designed by

Hideki Umezawa that highlights the roaring noise of industrial-scale quarrying as well

as the sound of the drone taking flight at the beginning of the film. Nonetheless,

based on my analysis and the aforementioned quote from Kurosawa, arguably the

main message and key ideas of this film are achieved through the use of drone

footage. The audio element provides further immersion into this visional landscape.

Comparing *Secretion* which is only a few years older to *Desiring Unspeakable Entropy,* drone technologies in a short period of time have enabled remote forms of sensing that have extended the human field of perception. The contrasting type of technology allows for a distinct form of storytelling about landscape in each film.

Drone art has entered the gallery space in different creative ways as seen by the examples given in this chapter. The sharing of drone power as a means to democratise the aerial view and to innovate existing art forms is a recent development in the history of drones. In summary, I reference words from the technology writer Joanne McNeil; "Technology creates new ways of seeing - with every advance we move closer to understanding what the world is about. With progress come new points-of-view, new perspectives, new possibilities…" (McNeil, 2012). Drone vision can represent an irreversible and potentially positive development in contemporary art. Inspiring new artistic practices, drone technology is radical in the face of a new aesthetic emerging in the era of digital visual culture.

3 - PERFORMANCE ART AND DRONES

With drones already well-established as a tool for photographers and filmmakers, they are additionally being used for other imaginative purposes. Increasingly, drones are being used in performance art, dance and theatre. For the St. Patrick's Day festival in 2021, over 500 Intel drones lit up the night sky above the River Liffey in Dublin City Centre. This piece of drone art was organised by Tourism Ireland in

collaboration with Intel and was the first-ever Intel light show in Ireland. Another recent high-profile example was the Radio City Hall's Rockettes 2022 Christmas Spectacular. In one of the showpieces, eight wing-propelled drones designed to look like fairies are choreographed alongside the dancers to produce an immersive and cohesive dance number. Drones are a liberating technology for performance. Lights, cameras, characters and puppets can be controlled by drones, providing exciting possibilities in the realm of 3D spatial design.

Technology has always been used as a tool for dance (Mokotow, 2017, p. 61). In the past that would have been curtains, rolling sets and lighting. Today, we see a shift towards new technologies and aesthetics including robotics in addition to the drone onstage. Daito Manabe is a Japanese artist who creates works of art that push against the boundaries between art and technology. Much of his practice involves integrating technologies with the human body. He frequently uses drones in his practice. In 2014, Manabe in collaboration with the dance troupe Eleven Play and Rhizomatiks (which is a Japanese company which funds art and technology projects) created a dance performance titled *Dance With Drones*. The first-ever performance took place in Tokyo but the choreography has been performed in multiple spaces since.

Dance With Drones begins with three dancers from Eleven Play appearing on the stage. The three drones are set to mimic the motions of the three dancers. There are quadrangular pyramid shapes attached to the upper part of each drone. This was done to enhance the visual expressions of the drones, particularly when they are

using a spinning motion. It was additionally done to protect the dancer's safety as it restricts the drones' motions. Around the middle point of the performance, there is a shift in the mood and the drones become more aggressive, taking the lead in the dance and the performers appearing to be fearful. Eventually, the human dancers exit the stage. The drone becomes fully in control, following the rhythm of the movements of a projection on the stage which is possibly a commentary on the use of metadata in drone warfare. It is a moving performance on the tensions between human dancers and dehumanised technologies. The drones in this choreographed performance provide a science fiction-like narrative Dancers no longer physically have to be present on-stage - the drone becomes an extension of their movement as an artificial motion. Furthermore, drones dissolve the barriers between the performer and the audience. By moving into the viewer's space, they interact with the audience making them part of the performance itself.

Fig. 8: Manabe, Daito

Eleven Play x Rhizomatiks

Dance With Drones (2014), Live dance performance

The engineering of the project was quite complicated and required multiple tests.

Drones were pre-programmed with flight patterns using CG and Ableton Live

software.

"There are two kinds of drone movements: a motion produced by tracking a dancer's movements and an artificial motion operated on the software. At first, dancers had to be trained to interact with the drones because they could not predict how they would move, but eventually, they were able to dance with the drones as closely as 10cm away from them." (Manabe, 2014).

To analyse the dancers' movements, cameras with a motion capture system were

installed on the ceiling with a mount. They were also set up on the stage using

tripods. It allowed for drone movements to be controlled in real-time not only as a

pre-programmed "flight path". This project has continued to be developed by Eleven

Play, Rhizomatiks and Daito Manabe. In 2015, they increased the number of drones

used in the performance to 24 drones. In this performance, the drones hovered

above the dancers, choreographed to their movements with a changing-colour light

attached to each drone. Suddenly, stage lighting becomes directly controlled by the

dancers themselves rather than a remote operator. The drone in this performance is

an extension of the human body. Applying drone art to theories of transhumanism,

the operation of the drone becomes an integration or enhancement to the human

body e.g. to movement, to vision. In the era of the drone, "The democratisation of the

drone suggests that the operator must "redesign" themselves and become "intimate"

with the technology." (Knox, 2017).

With drones being used for drone art amongst dozens of other purposes, they are no longer being simply developed as a technology for military purposes. It presents the intriguing argument; are the drones being used for performance art the same technology as the ones represented in drone art by Paglen for example? Therefore, should all drone technology be criticised in the same manner? This argument is in opposition to previously mentioned positions on drone theory.

3.1 TRANSHUMANIST INTEGRATIONS

The role of the human body in dance for both performers and audience members is constantly evolving, with the invention of 3D backdrops, drones and digital libraries of dance moves. (Doughty, 2008). Following Steve Dixon's definition of "digital performance" as "performance works where computer technologies play a key role rather than a subsidiary one in content, techniques, aesthetics or delivery forms" (Dixon, 2007) I consider drone art to be a type of "digital performance" particularly when considering works such as *Dance With Drones.* The value of drone art through the theatrical or performative medium is linked to the "performative space." Audience members can feel their own bodily and psychic relation to the distortions of normative space enacted by surveillance technologies such as drones (McGrath, 2010).

Drone art in the context of performance has more recently begun to include performances without human performers, migrating to outdoor spaces and drawing

inspiration from installation art. Studio DRIFT is an artistic duo composed of the

Dutch artists Ralph Nauta and Lonneke Gordijn. They work as part of a multi-

disciplinary team of 64 people to create experiential sculptures, installations and

performances. In 2022, Studio DRIFT presented their work *Franchise Freedom* at Art

Basel Miami Beach. Their projects aim to create performative art installations that

recall influences from nature and modern technology. To produce *Franchise*

Freedom, Studio DRIFT studied the natural flight patterns of starling birds over the

course of ten years. They were interested in capturing and representing the

movement of murmurations. In comparison to *Dance With Drones*, the flight paths of

the drones in *Franchise Freedom* are not determined by dancers or a pre-

programmed flight path. Instead, the patterns are generated by an algorithm based

on the research on the behaviour of starlings.

"The artwork translates into a poetic illustration of how we, as humans, strive to live
autonomously within societies defined by rules and conventions. Although the
patterns appear random, and the impression of such a swarm may remind us of
freedom, the behaviour of these birds is completely orchestrated and subject to
many rules and survival instincts." (Studio DRIFT, 2022).

In an interview with Sleek Magazine in October 2022, Nauta explained their rationale

for working with drones, "we used drones - which are usually associated with war,

destruction and surveillance - and reimagined their purpose by producing light

spectacles that brought people together. It's really about how we can employ

technology to create positive change for the future." By appropriating drone

technology for performance, Studio DRIFT encourages new debates around positive

ethical uses for technology. *Franchise Freedom* simultaneously represents the

intersection of drone art with other technological influences such as algorithms while at the same time, reflecting on the human condition.

Fig. 9: Studio DRIFT

Franchise Freedom (2017-2022), Performative art installation

Studio DRIFT with advancements in drone technology has begun to create indoor installations in addition to outdoor ones. In 2022, DRIFT created its first-ever indoor aerial drone performance with 100 drones. For the 2022 Venice Biennale in the Church of San Lorenzo, they presented *Social Sacrifice* which was based on the movements of shoals of fish. Like *Franchise Freedom* the work this was based on, the movement of the drones was pre-programmed based on an AI algorithm

developed by DRIFT. Similarly to *24 drones,* the drones are fitted with lights. The lights in this performance represented different types of fish e.g. the "predator drones" were represented by red lights whereas the shoal of fish were shown in white. The performance featured music by the composer Don Diablo. On AI, exploitation and the natural world James Bridle states; "one way to change the nature of these relationships, then, is to change the way we think about intelligence: what it is, how it acts on the world, and who possesses it." (Bridle, 2022, p. 17). DRIFT with *Social Sacrifice* use AI and drones to reflect not on human intelligence, but the compelling collective intelligence and orders of the natural world. These insights from nature provide a meditation on how humanity may address challenges from climate change to geopolitical conflict. Drone art provides a powerful medium for this performance to encourage dialogue and further understand the complex structures underlying natural phenomena.

Drone art in the context of performance explores important debates around drone ethics as well as transhumanism as seen by the work of Eleven Play x Rhizomatiks, Daito Manabe and Studio DRIFT. As these performances demonstrate, it has also initiated a new genre of performance that utilises new technologies to create beautiful, thought-provoking practices. Drone art in performance is liberating and provides thoughtful discussions on the role of the body in contemporary dance/performance.

CONCLUSION

There are arguments of negative ethical consequences to be made about drone

technology being used for drone strikes and mass surveillance as shown by the work

of artists such as Trevor Paglen.

 "While drones have many peacetime and humanitarian uses, it is their destructive
potential that haunts the general public. The apparent absence of risk when using
drones in conflict zones changes the choices and behaviour of users. It concludes
that drones cannot be considered as politically neutral, but rather as irreducibly
political and inclined to privilege specific modes of action and thinking." (Boyle, 2020)

Viewing the artworks such as in the case of Paglen's work one observes a lack of

obvious violence in the nature of the imagery with the drone despite referencing the

military use of drone technology. Drone art while having two separate definitions can

arguably be visually separated from its military origins. "Whether drones end up

being a net positive for liberty and equality depends on how we allow the technology

to develop and advance" (Higgins and Timm, 2012). If drones continue to develop for

art purposes, with intentions of de-centralisation and empowering communities their

power could potentially be harnessed to create a "net positive" in terms of pushing

the boundaries of art research and practice as demonstrated by the other practices

examined in this essay.

While some authors ascertain that drones are an inherently political technology

because of drone power's destructive potential, it is challenging to analyse drone art

as binary concerning positions on the ethics of using drone technology. Drone

technology is equally above being solely defined as "bad" or "dangerous." "Rather

than seeing drones as only good or bad, the current state of drone development and proliferation is not conducive to binarist thinking." (Pong, 2022). Some critics have argued that many drone art projects are evidence of an uncritical assimilation of drone technology into contemporary art culture. However, based on my analysis and examples of drone artworks, I argue that this is not the case and rather is the opposite. Drone art provides new contexts to relate to drones as an emerging technology in our society. In the context of contemporary art discourse, evidently drone art is part of a wider practice of reflexivity - particularly drone art that appropriates the image of the drone (Möller, 2021). Drone art presents new approaches to visualising and embodying our world of emerging technologies.

"Drone power" has the potential to inspire radical pieces of art that challenge ideas in established art forms such as previously mentioned in the second chapter about landscape aesthetics and the final chapter on performance art. This is in contrast to literature that is anxious about the "new aesthetic" (Berry, *et al.* 2012) and the future of modern warfare, surveillance culture and the "weaponised gaze". Based on market projection reports, it can be said that drones will not disappear anytime soon. In any case, they will be increasingly visible technology present in our visual landscape.

In conclusion, drone art has changed the world of contemporary art practices dramatically. From the democratisation of aerial perspective to performance installations that provide innovative choreographies drone art is at the forefront of contemporary culture. Drones provide a useful tool for capturing the aerial view in an

efficient, high quality and cutting-edge manner as evidenced by the work *Desiring Unspeakable Entropy*. It is a democratic development in modern history, as a form of "de-colonising" of the skies. Encountering drone art reminds us that too, drone warfare is not a thing of the past but is part of the fabric of our present. In the future, further developments in drone art may depend on civilian ownership and the hobbyist culture of drone use. Drone technology is constantly changing, becoming further developed due to breakthroughs in AI (as seen in the example of the practice of Studio DRIFT) and devices themselves becoming smaller and more agile. As this technology becomes further assimilated into contemporary culture, there is a desire and creative potential for the creative perspectives that drones can capture (Serafinelli, 2022).

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