Cover Art
Kathryn Brimblecombe-Fox: Artist's Statement

The Tree-of-Life Sends Its Energy Underground

In this painting a tree-of-life, representing all life, is vulnerable to attack. It stands alone in a tumultuous landscape. Weaponised remotely piloted Reaper drones circle above it. Are these drones readying for attack? Their Hellfire and guided missiles certainly seem aimed and ready. Or are the drones loitering so their sophisticated surveillance systems can gather more information – before attacking? The turbulent sky is swept up in the intrigue, yet light on the horizon signals hope, the dawning of a new day.

The tree is surrounded by the light of the new day. It draws this light into a halo of protection. At the same time, it sends its seeds, sap and roots deeper into the landscape – a subterranean landscape. Here, potential new trees hibernate, dormant until it is safe to emerge as seedlings or suckers. The landscape seems ripe, fiery and fertile, ready to re-charge. Yet the painting could be read a different way. The tree could be wounded, its death imminent - its blood seeping into the landscape. This blood, however, still holds the ingredients of life.

The turbulent sky also has stories to tell. It demonstrates that our sky is an increasingly contested place where surveillance and attack threats from above have created a new or artificial sky. In some places in the world, such as Yemen, Somalia, Afghanistan and Northern Pakistan, skies are feared. In these places a drone's loitering capability, and ability to switch from surveillance mode to attack mode, create a persistent threat. Architect Eyal Weizman's ideas on the verticality of threat have triggered some of my inspirations.[1] When the sky is feared, distance collapses and access to the beauty of cosmological perspectives is obscured. In *The Tree-of-Life Sends Its Energy Underground* the drones are painted the same colour as the sky to expose their camouflage attempts. However, there is hope. Red, white and yellow star-like dots combine the energy forces of the tree-of-life and light. They act as reminders of cosmological distance, from the nano to the cosmic. They also conjure the presence of distant galaxies and in doing so they remind us of the surrounding universe.

The Tree-of-Life Sends Its Energy Underground is from my recent "Dronescapes" series of works on paper.[2] The paintings have been inspired by my recent research into contemporary militarised technology, particularly airborne drones and night vision technology. The impetus for this research came from an interest in, and concern about, existential risk posed by emerging technologies. This type of risk could mean the potential demise of the human species, or its radical disruption, as a

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[1] Eyal Weizman, "The Politics of Verticality: Control in the Air," *Open Democracy*, accessed May 18, 2016. www.opendemocracy.net/ecology-politicsverticality/article_810.jsp Eyal Weizman is Professor of Spatial and Visual Cultures at Goldsmiths, University of London.

[2] For more about my "Dronescapes" please see "Portfolio: Dronescapes by Kathryn Brimblecombe-Fox." This is an interview that was conducted with me by Maggie Barnett from the Centre for the Study of the Drone, Bard College, New York. http://dronecenter.bard.edu/portfolio-dronescapes-by-kathryn-brimblecombe-fox/
More "Dronescapes" information and images are also available on my "DRONESCAPES" page on my blog https://kathrynbrimblecombeart.blogspot.com.au/p/dronescapes.html

result of malevolent, accidental or unforeseen outcomes of emerging technologies.[3] A particular interest and concern is the accelerating nature of developments in artificial intelligence and its integration into weapon systems. This coupling enables the development of Lethal Autonomous Weapons (LAWS) where human input in decision making loops is minimised and possibly removed. Progress in the development of Lethal Autonomous Weapons concerns many people, including artificial intelligence researchers and developers, physicists, philosophers, computer scientists and others. This is evidenced in the number of people who have signed the Future of Life Institute's "Autonomous Weapons: An Open Letter from AI and Robotics Researchers".[4]

Tree-of-Life[5]

In my paintings the transcultural/religious tree-of-life symbol acts as a reminder of life, human and non-human, over all time. I paint the tree either as a beacon or as a cascading mass of branches across a painting. The branching appearance of the tree speaks of life giving and sustaining systems, for example, human vascular systems and Earth's water systems, as well as energy forces that propel the universe. I often paint drones with surveillance or targeting signals emanating from their wide-area intelligence, surveillance and reconnaissance systems. These signals, although branching in appearance, contrast with the tree-of-life's complex and seemingly random branching patterns. This contrast prompts questions about how accelerating developments in contemporary technology pervade, infiltrate and mediate life.

I attempt to tease out how the tree-of-life can symbolically contribute to an understanding of life in the twenty-first century. It has been a meaningful symbol of life across cultures and religions for eons, why relegate it to past history without exploring its present and future potential? I ask, what might the tree-of-life say about systems in the digital age where operative and instructional algorithms remain invisible. In many of my paintings I also include binary code instructing words such as LIFE and Human. I gain a contrary enjoyment in hand painting code, making it not only visible, but also colourful, even aesthetic.

Drones[6]

Airborne drones are "unmanned," remotely operated vehicles. This means they are piloted from ground control stations that are often situated thousands of kilometres from surveillance or attack targets. Crew at these stations also operate a drone's various surveillance, communication and weapon systems. Other support staff maintain drones at military bases that can also be remote to the piloting and surveillance crew, as well as targets. Drones currently, therefore, cannot be described as unpiloted and uncrewed. Even future robotic piloting, surveillance and

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[3] Research on existential risk posed by emerging technologies is conducted at research centres including, amongst others, the Centre for the Study of Existential Risk, University of Cambridge http://cser.org/ and the Future of Humanity Institute, University of Oxford https://www.fhi.ox.ac.uk/.

[4] Future of Life Institute, "Autonomous Weapons: An Open Letter from AI and Robotics Researchers," (July 28, 2015), http://futureoflife.org/open-letter-autonomous-weapons/.

[5] For more about my interest in the tree-of-life please visit "Tree-of-Life Dreaming" blog post where I write about the tree-of-life and provide other links to more posts. https://kathrynbrimblecombeart.blogspot.com.au/2015/05/tree-of-life-dreaming.html.

[6] I recommend visiting *The Centre for the Study of the Drone*, Bard College, New York website. It is a good starting point for research into military drone development and use. http://dronecenter.bard.edu/.

maintenance systems would mean that drones could still be described as being piloted and perhaps crewed. However, in an age of accelerating developments in autonomous systems, where artificial intelligence replaces human operative and instructional capabilities, the term “unmanned” signals the removal of the human being from decision making loops and operational tasks. This removal could be called a process that de-humanises or perhaps, un-humanises. An ominous neologism *un-humanned* pops into mind. The replacement of the human being by robotics and artificial intelligence is a hot topic across a number of industries. However, the word “unmanned” in relation to weaponised drones brings the removal of the human being into sharp focus. This is especially so because the human being is not necessarily removed as a potential target. In the future, death by Lethal Autonomous Weapons may precipitate the final removal of the human being, maybe the human species?

The historical trajectory of the airborne military drone goes back to conflicts such as World War Two and the Viet Nam War where they were used as decoys, for surveillance and to assist bomber targeting. They were used for similar purposes during the first Gulf War. However, developments in military drone capabilities have accelerated since the United States weaponised drones in the aftermath of 9/11.[7] Since then a number of countries now have operational military drones variously capable of long range, long dwell and endurance surveillance and/or targeting. These countries include the United States, the United Kingdom, France, Israel, China, Iran, Russia and Turkey.[8] The Royal Australian Air Force has previously provided drone surveillance support to Australian troops and partners in southern Afghanistan, with their final mission occurring in 2014.[9] Since then Australia has continued with a drone procurement and training program.[10] Organisations such as ISIS have developed airborne drone improvised explosive devices (IED) by attaching explosives to smaller domestic/civilian drones.[11]

Developments in drone swarm technology have also hastened.[12] Swarming means there are multiple drones working as a team. In a swarm, drones are less reliant on Global Positioning Satellites (GPS) for orientation because they relay geo-spatial information between themselves at the same time as adding to their banks of geo-spatial data. If one drone is “taken out” the others automatically re-calibrate and continue on their mission. Increasing self-learning capabilities and autonomous systems are evidenced in recent drone swarm developments.

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[7] Mark Bowden, “How the Predator Drone Changed the Character of War,” *Smithsonian Magazine* (November, 2013), accessed December 15, 2016, http://www.smithsonianmag.com/history/how-the-predator-drone-changed-the-character-of-war-3794671/.
[8] Dan Gettinger, “Drones Operating in Syria and Iraq,” *Centre for the Study of the Drone* (New York: Bard College, December 13, 2016), http://dronecenter.bard.edu/drones-operating-in-syria-and-iraq/.
[9] Royal Australian Air Force, “Remotely Piloted Unmanned Aircraft Systems,” accessed December, 2016, https://www.airforce.gov.au/Technology/Remotely-Piloted-Unmanned-Aircraft-Systems/?RAAF-ascmBdhDi9vUAlg7bh3rpB1QbBuByBHJ.
[10] Ibid.
[11] Dan Gettinger, “Drones Operating in Syria and Iraq,” *Centre for the Study of the Drone* (New York: Bard College, December 13, 2016), http://dronecenter.bard.edu/drones-operating-in-syria-and-iraq/.
[12] Various countries have reported drone swarm technology. These have been reported in a number of media outlets. Examples are: *BBC*, http://www.bbc.com/news/technology-38569027 *Digital Trends*, http://www.digitaltrends.com/cool-tech/perdix-drone-swarm/. Dan Gettinger, “What You Need to Know About Drone Swarms,” *Centre for the Study of the Drone* (New York: Bard College, November 3, 2014), http://dronecenter.bard.edu/what-you-need-to-know-about-drone-swarms/.

I wrote about two films in a recent article "Kathryn Brimblecombe-Fox: *Red Rain"* published in *Hecate*.[13] These films are *Eye in the Sky* (2015) and *Ex Machina* (2015).[14] Here, I offer some further thoughts on *Eye in the Sky*. The film grapples with moral and ethical dilemmas associated with drone targeting and killing. It demonstrates how the human being is currently involved in decision making loops. In the film a decision to strike high value targets (HVTs) is thrown into ethical chaos by the presence of a young girl in the vicinity of the kill zone. If the HVTs are able to continue preparations their ultimate suicide mission will kill many people. Human intervention in manipulating the delineation of the kill zone co-ordinates eliminates that threat, but has dire consequences for the young girl and her family.

Eye in the Sky raises many questions about the use of drones for remote surveillance and killing. It also raises questions about a future where more autonomous systems are likely to operate. Would an autonomous system have struck earlier? Would it have immediately halted processes once the little girl appeared? In the film, an insect-like drone operates as a surveillance tool that covertly enters the building where the suicide bomber is being prepared. As drones become smaller and can operate in swarms another killing scenario presents itself. The HVTs in *Eye in the Sky* could have been "taken out" by lethal drone-insects capable of entering the intimate spaces of a building. These kinds of technical developments pose significant questions about the use of drone surveillance, and their potential lethality, not only in conflict and counter-insurgency situations, but also in civilian policing environments.[15]

Conclusion

Paintings like *The Tree-of-Life Sends Its Energy Underground* engage with the figure of the military drone to address various issues associated with life, humanity and technology in the twenty-first century. However, I suggest that the medium of painting offers a counterpoint to contemporary technology. My paintings, although addressing complex technological issues, do not rely upon digital or cyber instruction or connectivity to exist. Nor do they need to be switched on at a power source. The hand of the human artist reminds us of the agency and presence of the human being.

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[13] Kathryn Brimblecombe-Fox, "Kathryn Brimblecombe-Fox: Red Rain," *Hecate*, 42.1 (2016): 133-134.
[14] This online article examines the technology demonstrated in *Eye in the Sky*. Peter Asaro, "Dr Peter Asaro on Drone Technology in *Eye in the Sky*," *Sloan Science and Film* (April 19, 2016), http://scienceandfilm.org/articles/2686/dr-peter-asaro-on-drone-technology-in-eye-in-the-sky.
[15] For more on the role of drone surveillance and the blurred lines between military and policing operations please read Ian Shaw, "The Urbanization of Drone Warfare: Policing Surplus Populations in the Dronepolis," *Geographica Helvetica* 71 (2016): 19-28, http://www.geogr-helv.net/71/19/2016/gh-71-19-2016.pdf. Ian Shaw has recently published *Predator Empire: Drone Warfare and Full Spectrum Dominance* (Minneapolis: University of Minnesota Press, 2016).