**Abstract**

Since the end of last century the US military has been transforming into a modern fighting force. High speed communications systems and real time imaging have changed the face of war but new weapons are only one factor driving change. New leaders and new policies also play an important part.

This paper looks at the transformation of the US military and specifically the increasing use of unmanned aerial vehicles (UAVs) or drones. It also discusses my own work TRACKER and reflects on the role that art can play in raising awareness about surveillance and war.

**Keywords:** art, surveillance, robotics, drones, war, politics.

**Introduction**

The events of 9/11 signalled the start of a new phase for the United States military. Weapons and strategies developed during the Cold War were ill suited to the ‘war on terror.’ Since 2001 the US military has increased its “ability to surge quickly to trouble spots across the globe” [1]. This strategic shift, which aims to counter what is perceived as a geographically dispersed threat, has also impacted on intelligence, surveillance and reconnaissance (ISR) activities. These activities, which were also intense during the Cold War, are now more multi-focused and global in their scope. Surveillance today is also aided by a wide range of high-tech equipment supplied by a select number of powerful defence contractors.

Lockheed Martin, Boeing and Northrop Grumman are three of the biggest weapons manufacturers in the US. All three companies develop advanced weapons systems, including the spy planes or drones that have been used in Iraq and Afghanistan. Drones play an important part in the Obama administration’s national security strategy but many people are concerned about the lack of transparency surrounding the drone program. It is not possible within the scope of this paper to properly weigh concerns about privacy and the violation of human rights against the need to maintain national security. Instead I will outline some of the findings of the research I have conducted that has informed my artwork TRACKER. This work explores the idea of surveillance by using three robots that follow viewers in the exhibition space and which also download the stock prices of the abovementioned weapons manufacturers.

**Persistent surveillance**

The military use of unmanned aircraft is not new. However in WWI and WWII unmanned planes were used as air torpedoes, delivering bombs to predetermined targets in a war zone [2]. Today’s drones or spy planes provide ‘persistent surveillance’, which is an altogether different type of strategy. A crucial road along which a convoy will travel can be watched in advance to establish the normal, everyday patterns of activity. Unusual activity just prior to the convoy’s departure might signal preparations for an ambush. Drones are commonly used in war zones for this kind of surveillance and the drone program has expanded during President Obama’s term in office. Over the same period drone strikes have also increased dramatically. The London-based *Bureau of Investigative Journalism* estimates that somewhere between 2,500 and 3,500 people have been killed by US drones in Pakistan since 2004. This includes between 475 to 900 civilians [3]. The military argues that drones provide contextual information about what is happening on the ground and therefore reduce the number of civilian casualties. However, many are concerned that without judicial oversight the drone program is open to abuse.

John O Brennan, who has been dubbed ‘Mr Drone’, is one of the key architects and defenders of the US drone program. In January 2013 President Obama nominated Brennan as director of the CIA. Congress confirmed Brennan’s appointment in March (81 in favour/16 against) but his nomination sparked debate on the legality of using drones. Obama was forced to release two classified documents outlining the legal justification for killing American citizens abroad who are deemed to be terrorists. It is believed that these documents relate to the targeted killing of Anwar al-Awlaki in Yemen in September 2011 [4]. Obama has also recently released guidelines for lethal strikes [5] in a bid to counter criticism about the lack of transparency surrounding such important decisions.

**Echoes of the past**

There has been intense public debate in the US about surveillance especially when Americans fear that they themselves are being watched. After recent revelations about the National Security Agency’s PRISM program, the intelligence community was accused of acting like the secret police and engaging in activities reminiscent of Cold War style domestic spying [6]. While a great deal of secrecy surrounds US surveillance programs, clearly the political landscape has changed since the 1950s. Today non-state actors have influence and capabilities that previously would have been only available to states. Transforming the US military to meet these challenges has not happened overnight. Harvey M. Sapolsky and his co-authors note in their book *US Military Innovation Since the Cold War*, that over a decade before the September 11 attacks, the 1991 Gulf War revealed the effectiveness of America’s military transformation [7]. They cite stealth aircraft, thermal sensors, GPS navigation, laser guided bombs, satellite communications, night vision equipment and radar surveillance as evidence of America’s technological innovation. However the ground campaign that followed the air bombardment of Baghdad has also been described as a ‘left hook’ manoeuvre, not dissimilar to that “conceived by General Grant’s 1863 Civil War campaign at Vicksburg” [8]. This suggests that in the Gulf War the US fought with new weapons but old tactics. Since 2001, the US military has looked outside itself to see how best to meet the challenges of the 21st century.

**Transforming the US military post 9/11**

Vice Admiral Arthur K. Cebrowski played a key role in transforming the US military into a modern fighting force. In the months following the September 11 attacks, Cebrowski was appointed by former Secretary of Defense Donald Rumsfeld to head the newly established Office of Force Transformation. Cebrowski is well-known for advocating what he called Network-Centric Warfare, an approach that looked at and tried to learn from what was happening in society at large and especially in the business world. Peter W. Singer in his book *Wired for War* says that, in his article *Network-Centric Warfare: Its Origin and Future* [9], “Cebrowski wrote with an admiration bordering on obsession of the many wonders of the new technology companies whose stock prices were then soaring and the triumphant business models that were seemingly changing the fabric of business and society. He cited lessons from Cisco, Dell, and even American Airlines, as to how information technology was giving American businesses newfound advantages,
which, in turn, presented a new model of fighting and winning wars” [10]. Cebrowski notes however that transformation is not just about adopting new technologies. One of the key areas he identified as needing a new approach was military intelligence. “The key change is that we're moving away from the concept of information ownership into one of information sharing” [11] he said in an interview. When asked if the net-centric approach to things had impacted the notion of command-and-control, Cebrowski was unequivocal. “Absolutely. For example, we've seen a profound compression of time to plan very complex operations” [12]. Using the model of a network, lines of communication became more horizontal. Information was shared between different echelons instead of just being distributed through a top down structure.

The changes that Cebrowski brought about helped to reshape the US military into a more versatile fighting force and have enabled it to continue to project its strength and interest globally. Paul Virilio argues that technologies, and the new coalitions and practices they bring about, have far reaching consequences. He argues that the field of perception, in terms of its spatiality and temporality, has changed. When interviewed in 2009, Paul Virilio says “From now on, the battlefield is a global one. It is not worldwide anymore in the sense of the First or Second World War. It is global in the sense of the planet, the geosphere" [13]. The shift to a global battlefield has increased, in the eyes of some governments, the need for worldwide and persistent surveillance and the Obama administration has made its fleet of drones one of the centerpieces of its national security program.

Legal frameworks
The legality of using drones is still being debated. Meanwhile new UAV’s with expanded capabilities continue to be developed. The X-47B demonstration unmanned combat air vehicle (UCAV) built by Northrop Grumman was successfully launched from an aircraft carrier in May 2013. Human Rights Watch has cited the X-47B as “one of several weapons that represent a transition toward development of fully autonomous arms” [14] or ‘killer robots’ that can make targeting decisions without a human in the chain. Christof Heyns, a United Nations human rights investigator, is calling for a moratorium on “killer robots” which he says are being tested by “United States, Britain and Israel without debate on moral and legal issues” [15]. There have also been renewed calls for more transparency about US foreign and domestic surveillance following revelations by Edward Snowden, the CIA intelligence analyst who blew the whistle on the NSA’s PRISM program. Americans were shocked when it was revealed that their government approved the warrantless, mass collection of telephone and internet communications. Only two weeks after the Guardian published its story based on Snowden’s revelations, FBI director Robert Mueller’s admitted that the agency was using drones “for surveillance on US soil” [16]. This prompted Democrat Senator Dianne Feinstein to say that drones are the “greatest threat to the privacy of Americans” [17]. The American Civil Liberties Union says “drones, like any other surveillance tool, should only be used with a warrant and that any images they record should only be kept if there is reasonable suspicion they contain evidence of a crime, or are relevant to an ongoing criminal investigation” [18]. Clearly, new weapons systems are being developed faster than the legal frameworks required to protect human rights and privacy.

TRACKER
My art project TRACKER (2013) aims to raise awareness about drones, albeit in a non-didactic way. The work comprises three robots that sense people in the exhibition space and follow them. The robots are relatively compact industrial looking objects. Each robot is linked by wifi to the New York Stock Exchange and downloads the share price of one of three weapons manufacturers in the US: Lockheed Martin, Boeing and Northrop Grumman. These companies make the UAV’s or robot spy planes that are used in Afghanistan. As the share price of one of the companies goes up, the robot assigned to that specific company moves more quickly and gets closer to its target. Each robot also displays a short interactive video showing a different pair of feet walking. Filmed in low light to echo the look of film noir, the videos are based on my memory of scenes from films in which a private eye pads the dimly lit backstreets chasing down a lead.

I shot the videos in a style reminiscent of film noir for a number of reasons. Firstly, secrecy is a common trait of characters in film noir. The protagonist in these films is often an outsider who lives by his wits. Events in the narrative are often not as they first seem. Common plot lines include double identity and double crossing. The motivations of the characters in film noir are never clear, enmeshed as they are in complex webs of deceit. Secondly, screenwriter, director and film critic Paul Schrader in his 1972 essay Notes on Film Noir argues that the distinctive tone and look of classical film noir movies of the 1940s and 1950s began with films made in the late 1930s during the Great Depression like Fritz Lang’s You Only Live Once (1937). He argues that this interest in dark cinema was only blunted by the intervening war period with its propaganda films. After the war, film noir movies became
“markedly more sardonic – and there was a boom in crime film” [19]. While film noir movies reflect uncertain times, Schrader says the theme of self-doubt is submerged in mannerism and style [20].

If, as Schrader argues, the distinctive look of film noir mirrors the disillusionment in the US at the end of the Great Depression, the more recent global financial crisis has also undermined confidence in America’s economic superiority, with big companies like Enron and Lehman Brothers collapsing. While it would be tempting to draw a straightforward analogy between the Great Depression and the 2007-08 financial crisis there are clear differences. For example, following the stock market crash in 1929, commodity prices fell and unemployment was high. The American government’s decision to introduce tariffs worsened the depression by reducing foreign trade. In the 1930s a deflationary spiral set in, whereas monetary policy implemented in the wake of the 2007-08 financial crisis has eased deflationary pressure. Despite these differences both events have had a significant impact on America’s self image.

Linking TRACKER’s robots to the stock market comments on the grim financial situation in the US as it tries to reduce its budget deficit after being forced to raise the debt ceiling. It also points to US anxiety about other countries with growing economies like China taking their place on the world stage. This anxiety is echoed by what viewers interpret as a nervous energy in the robots. Viewers most often voiced this idea when the robots scanned the room attempting to get a fix on the next target. When each robot follows a viewer it simultaneously downloads the stock price of one of the abovementioned US weapons manufacturers. A large drop in the stock price as a result of uncertainty in the market causes the robots to slow down and keep further away from their target person.

While changes in the stock market are reflected in the movement of the robots, it will also be interesting to watch, in a broader sense, how the weapons manufacturers react to defense budget cuts. It would be easy to be cynical. Despite the cuts, an extra US$ 8.4 billion has been requested during the next fiscal year for Lockheed Martin’s F-35 Joint Strike Fighter program [21]. The F-35 is the most expensive weapons program in military history and is already substantially over budget. Defence analyst Peter Singer observes that, in tough budget times established defense programs are likely to have “stronger support from Congressional members protecting existing factories and jobs in their district” [22].

Art and dissent
The serious nature of the issues explored in the work TRACKER raises questions about art’s efficacy in bringing about social change. My stated aim at the beginning of the project was to raise awareness about drones, but clearly artworks operate very differently from protest movements. Jacques Rancière in his book Dissensus: on politics and aesthetics rightly argues that works that assume a direct link between an artist’s aims and the political import of an artwork rely on an outdated model of the efficacy of art which he describes as pedagogical [23]. Instead Rancière sees art operating in the aesthetic realm, which suspends “every determinate relation correlating the production of art forms and a specific social function” [24]. He calls this paradoxic form of efficacy dissensus because it disconnects the aims and actions of the artist, the ‘sense’ or intention of the artist, from the “sensory forms, the significations that can be read on them and their possible effects” [25]. Rather than negating the political efficacy of art, Rancière sees dissensus “at the heart of politics, since …(politics) consists in an activity that redraws the frame within which common objects are determined” [26]. Dissensus undoes the ‘natural’ logic and instead “re-frames the given by inventing new ways of making sense of the sensible” [27]. Art and politics, says Rancière, are both forms of dissensus but there is no direct link between the artist’s intention realized in an artwork and “a capacity for political subjectionisation” [28]. Instead Rancière argues that artists “reconfigure the fabric of sensory experience” [29] by intertwining several logics and inventing “novel relationships between things and meanings that were previously unrelated” [30].

Returning to Schrader’s observations in Notes on Film Noir, he argues that film noir foregrounds style instead of a moral or message. In doing so, he says these films are less pedagogical than the propaganda films made during WWII and also less socially conscious than other films made during the Great Depression [31]. If any message is to be read into film noir, Schrader says it is that film noir “tried to make America accept a moral vision of life based on style” [32]. Although this final statement by Schrader might seem at first to contradict his earlier argument, a vision of life based on style suggests that style, with its openness to interpretation, is both a means and an end in its own right. There cannot be a direct correlation between the aim of the artist and the sensory form of the artwork, nor any predictable effect arising from a work of art.

Conclusion
Finally, it is important to reflect on the transparency of a primary resource used in my research, that is the daily news. Much of the information I have referenced has been reported in the mainstream press, which is often criticised for being pro big business. Despite the fact that these reports are readily available in the US and other western nations, news reports also have their own specific type of invisibility. They are quickly replaced in the mind of the reader by the next news story. Walter Benjamin, writing about the news media of his time, noted that the “freshness of the news, brevity, comprehensibility and, above all, lack of connection between the individual news items” [33] contributes to a situation whereby the individual is unable to ‘take hold’ of their experiences, to “assimilate the data of the world around him by way of experience” [34]. In contrast, artworks stimulate imagination rather than simply imparting information. They also provide a relational interaction that encourages participation, interpretation and the exchange of ideas with others in the gallery. My artwork TRACKER provides a space for this kind of interaction and encourages the viewer to make conceptual connections that incorporate past and present experiences as well as individual and collective meanings.

References and Notes
4. The attack also killed Samir Khan, the editor of the militant group’s internet magazine Inspire. Both men were American citizens.


15. Reuters [13].


17. Senator Dianne Feinstein quoted in Ben Knight [15].

18. Ben Knight [15].


22. P W Singer quoted in Spencer Ackerman [19].


34. Walter Benjamin [25].