

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

This PDF is auto-generated for reference only. As such, it may contain some conversion errors and/or missing information. For all formal use please refer to the official version on the website, as linked below.

## Death from above: Drones, Visuality and the Politics of Killing

<https://www.e-ir.info/2015/07/27/death-from-above-drones-visibility-and-the-politics-of-killing/>

FREDERICK NEVE, JUL 27 2015

### Introduction

This essay evaluates how the Unmanned Aerial Vehicle (UAV), or 'drone' camera, as a medium of visual representation, impacts on the waging of contemporary warfare. In particular, this essay assesses the extent to which the drone camera assists the US drone pilot in killing. The prevailing literature contends that the drone camera alleviates the psychological burden of killing by visually representing warfare in a manner which spatially and morally distances the US martial body from their lethal consequences. Additionally, the drone camera, and the technological nexus it is situated within, enables killing to become a networked phenomenon, dividing the moral culpability between multiple actors, and further alleviating the psychological burden of killing-by-drone. However, this essay adopts a more nuanced stance in arguing that killing through the drone camera's gaze may be more difficult than the present literature estimates, for two reasons. Firstly, the specific ontology of the imagery relayed to the drone pilot via drone camera – hereafter referred to as 'drone vision' (Stahl, 2013: 659), could potentially inflict great psychological trauma on the drone pilot. Drone pilots intimately experience the destruction inflicted by them unfold in real-time via video feed (Mazzetti, 2012) and often have to monitor the aftermath of their actions to confirm fatalities (Zucchini, 2010) and oversee potential developments (PBS, 2013). Consequentially, Post-Traumatic Stress Disorder (PTSD) may manifest itself in drone pilots, at a similar rate to other combatants (Asaro, 2013: 217), contradicting the dominant notion that drone pilots' distance from conflict affords them protection from such psychological trauma. Secondly, drone vision produced by the Multi-Spectral Targeting System camera (MSTS camera) – the most prevalent drone camera in operation, and the focus of this essay – is fallible. Under certain circumstances, the MSTS camera produces poor quality drone vision, which can be misinterpreted and result in collateral damage, compounding the psychological burden of killing-by-drone. Drone vision is a complex phenomenon, dependent on the technologies that produce it, and is likely to transform with these technologies. Thus, this essay will examine recent modifications to the drone camera as a panacea to the MSTS camera's limitations, and interrogate how they may impact on the psychological burden of killing.

### The Drone, Drone Vision and Visuality

This section provides a detailed examination of drone vision and reveals its complexity and variability. Drone vision is defined here as the visual representations relayed via drone camera to the drone pilot's screen. Examining the specific ontology of drone vision in greater detail will enable us to locate particular features which may ease or complicate the drone pilot's psychological ability to kill. Whilst examining the complexity and variability of drone vision will provide a more nuanced analysis, enabling a more rigorous conclusion regarding how drone vision affects the waging of war.

Killing-by-drone has become controversially emblematic of contemporary US warfare, with little indication of decline. Prior to September 11, the US army had two hundred drones in operation; by 2011 this number had increased to seven thousand (Finn, 2011). This dramatic growth in the use of drones has meant that contemporary warfare is increasingly mediated and conducted through the visual representations relayed to the drone pilot, and other military personnel, networked into drone operations via the drone camera. The drone is thus, not simply a weapon, but an

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

emerging medium for representing conflict (Stahl, 2013: 659). Drone vision created by the MSTs drone camera typically consists of live video imagery depicting a bird's-eye view of various geographical landscapes: usually Middle Eastern mountainous terrain or underdeveloped urban areas, which can produce a cluttered visual scene. Live video is relayed to drone pilots in colour during the day and black-and-white, via thermal imaging, at night (Zucchini, 2010). The imagery relayed to the drone pilot is such that there is a delay of 1.8 seconds, a problem the US military have termed 'latency' (Gregory, 2011: 207; Mazzetti, 2012). Importantly, drone vision is not just viewed by the drone pilot, but is networked between various personnel including a 'sensor operator' seated next to the drone pilot, ground troops, and Central Command (CENTCOM). Throughout the essay, this analysis will examine these ontological features of drone vision and interrogate how they affect the US drone pilot's ability to kill.

However, drone vision, like any medium of visual representation, possesses its own 'visual culture', impacting on "how we see, how we are able, allowed, [and] made to see" (Foster, 1988: ix). Therefore, whilst specific ontological features of drone vision may enable the drone pilot to kill with relative psychological ease, we should not neglect the broader visual culture which surrounds drone vision that might also enable this killing. This visual culture is socially constructed (Campbell, 2007: 357), shaped by various cultural discourses which determine how drone pilots perceive and react to drone vision, thereby establishing ways-of-seeing, which affects how drone warfare is waged. Visual culture therefore "circulate[s] in the field of vision establishing visibilities [...] stereotypes, power relations, the ability to know and to verify" (Rogoff, 2000: 20). Given the military context, the discourses contributing towards the visual culture that surrounds drone vision are likely to be militaristic and dehumanizing. Due to the immaterial nature of visual culture, identifying its exact characteristics is fraught with difficulty. Furthermore, drone vision is ultimately mediated through the drone pilot. Different discourses within the visual culture may resonate more forcibly with different drone pilots. Thus, ways-of-seeing and reacting to drone vision, whilst impacted by a broader visual culture, is inevitably and inherently a variable phenomenon. However, one cannot ignore the impact this visual culture might have on how drone vision is perceived and reacted to. This essay thus examines the extent to which this visual culture may enable drone pilots to kill, noting that various dehumanizing tropes deployed by the military may contribute to a visual culture whereby humans represented by drone vision are perceived as 'enemies' and 'terrorists', alleviating the psychological burden of killing. However, although this visual culture might be informed by certain militaristic and dehumanizing discourses deployed by the military institution, rather than drone vision itself, it is crucial to interrogate how these discourses interact with the ontology of drone vision. Indeed the ontology of drone vision might negate or reinforce these discourses. Thus, drone vision and visual culture have a complex relationship, and both impact on the drone pilot's psychological ability to kill. This relationship is examined throughout the analysis and enables a more sophisticated and nuanced conclusion regarding the drone camera's impact on warfare.

The impact of drone vision on the psychology of killing in war is complicated by the presence of a broader visual culture, which affects how drone pilots perceive and respond to drone vision. However, the analytical complexity of drone vision is compounded by it being neither immutable nor ubiquitous, but subject to the specifications of the drone camera, and the drone it is attached to. Firstly, drone vision is influenced by the model of drone that produces it. Whilst the drone has been deployed by the US military for reconnaissance purposes since Vietnam (Benjamin, 2013: 13), their ability to kill is a recent phenomenon, with the first combat-ready MQ-1 Predator being deployed in Afghanistan four days after September 11 (Zucchini, 2010). Since then, the UAV has captured the imagination of the US military, leading to a plethora of models being developed and incorporated into the US military machine, each with different specifications which produces different drone vision. The MQ-9 Reaper, for example, flies at twice the height and speed of its predecessor the MQ-1 Predator (Turse, 2008: 215), whereas the Switchblade drone, designed for "kamikaze" missions, not only flies at a significantly lower altitude (Franklin, 2012; DeShaw Rae, 2014: 12), but utilises a nose-mounted camera to produce 'eye-level' drone vision, as opposed to the 'bird's-eye' drone vision typical of the MQ-9 Reaper and MQ-1 Predator. Drone vision is thus, far from ubiquitous, and the drone pilot's ability to kill may vary with the particular drone complicit in producing that drone vision.

Secondly, drone vision is intimately tied to the technological infrastructure of the camera that produces it, and will be transformed in tandem with technological advances to visual recording technology. Thus, drone vision is far from immutable, and is in a constant state of flux. Technological advances to the drone camera, such as the ARGUS-IS, may alter drone vision to such an extent that killing-by-drone could become psychologically easier, or more complicated. These particular technological developments are examined in the final section. Therefore, drone vision

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

is produced by a network of technologies including the drone camera, the drone-as-filmer, and a sophisticated telecommunications infrastructure, which enables drone vision to be displayed over great distances onto the monitors of the drone pilot and other military personnel. A universal or typical ontology of drone vision does not exist. Drone vision is a diverse phenomenon, dependent on a technological nexus and so its ontology will shift with technological changes in ways that may facilitate or hinder (the ease of) killing-by-drone. Thus, as a caveat, conclusions drawn in consequent sections of this analysis may be based on a generalised conception of drone vision, usually one produced by the MSTS drone camera. Furthermore, drone vision is always mediated through a visual culture; although this will impact different drone pilots to varying degrees, it is a factor worth considering in evaluating the impact of drone vision on contemporary war.

This section has demonstrated the complexity and variability of drone vision as a concept, enabling a more nuanced and accurate assessment regarding how visuality affects contemporary drone warfare. This assessment now follows.

## Drone Vision and the Psychology of Killing

This section interrogates components of the contemporary literature on drone warfare which argues that drone vision reduces the psychological burden associated with killing, enabling drone pilots to kill regularly with relative ease. The literature posits two reasons for this. Firstly, drone vision ‘distances’ the US martial body from combat and the moral consequences of killing. Secondly, drone vision enables killing-by-drone to be a networked phenomenon which divides and dissolves responsibility by incorporating a variety of actors into the kill-chain.

### *Drone Vision and Distancing*

Scholars often argue that most people do not possess an innate capacity to kill and focus on the circumstances and conditions within warfare which enable humans to overcome their psychological inhibition against killing (Grossman, 1996). One inhibition which militaries have sought to overcome is that killing in war often takes place within close quarters (Protevi, 2013). This profoundly impedes soldiers from killing, because (i) seeing the enemy’s face reveals their common humanity (Stern, 1985; Grossman, 1996: 225); (ii) killing at close quarters is a deeply embodied experience, whereby one viscerally experiences the consequences of killing. Thus, soldiers may avoid killing in order to circumvent future self-revulsion or trauma (Casey, 2000). Therefore, enabling the martial body to kill from a distance is a powerful means of overcoming this psychological resistance to killing (Grossman, 1996), which commentators argue reaches its zenith through drone vision.

Drone vision is the manifestation of a technological nexus including drone, drone camera and telecommunications, which together allow for the visual reconstruction of war-zone geographies over great distances, onto the drone pilot’s monitor. Drone vision, therefore, collapses geographical space, allowing war to be waged from afar; the “death of distance enables death from a distance” (Gregory, 2011: 192). These technologies disembodify and commute the US martial body from the war-zone to a remote location. Drone pilots are asked to kill from padded leather chairs (Zucchini, 2010) behind computer monitors within a virtual cockpit. Killing through drone vision thus becomes a disembodied experience, where micro-bodily movements of joystick and throttle replace the grand bodily movements and embodiedness of close-quarters killing. Although drone vision enables drone pilots to kill remotely by visually representing war-zones onto computer monitors, disembodifying and distancing the US martial body is not possible without the technologies that produce drone vision. The drone, drone camera, and a sophisticated telecommunications infrastructure, are all equally culpable in the production and dissemination of drone imagery, which enables drone pilots to kill from a distance with psychological ease.

Moreover, drone vision does not only geographically distance the drone pilot from the war-zone, but also morally distances the drone pilot from the lethal consequences of their actions. In this case, the specific ontology of drone vision, rather than the drone camera, enables this moral distancing by removing the human from warfighting (Stahl, 2013: 660). The MSTS drone camera, whilst highly sophisticated in providing full-motion video (FMV), in relatively high definition (Gregory, 2011: 193), is vulnerable to datalink degradation, bandwidth limitations and poor environmental conditions, such as weather and clouds (NASA, 2010), which produces drone vision at such a low quality that human beings are visually reduced to “nebulous pixelated forms” (McSorley, 2013: p.6). The MSTS

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

drone camera is attached to the underside of either the MQ-1 Predator or the MQ-9 Reaper, meaning that drone vision represents humans from a bird's-eye view, or even totally hidden from sight within buildings and vehicles. Therefore, the limitations and positioning of the MSTC drone camera means the human face, and even the human, is absent or obscured in drone vision. As previously noted, the human face has a profound inhibitory effect on killing (Grossman, 1996: 225; Protevi, 2013: 128). In this way, drone vision distances drone pilots from the consequences of their actions by up to seven thousand miles (Webb et al, 2010: 31), enabling drone pilots to kill with relative psychological ease.

Drone vision also morally distances drone pilots from the consequences of their actions by decontextualizing the enemy, dissociating them from social and familial relations, which may become morally relevant in the drone pilot's decision to kill. Furthermore, offering a decontextualised representation of the enemy enables the enemy to be repositioned within an orientalist visual culture. This might contain various dehumanizing discourses, as already established, which are inculcated within the drone pilot to self-legitimise their killing. These discourses often reimagine human beings, and even innocent civilians, as 'enemies' and 'terrorists' whose lives are "devoid of value": "bare life" entities who can be killed yet not sacrificed (Agamben, 1995: 139). This visual culture, thus constructs a 'veil of deniability' alleviating the psychological inhibition associated with killing. Thus, context is projected onto drone vision. However, as noted previously, the ontology of drone vision might reinforce the dehumanizing and militaristic discourses embedded within this visual culture.

For example, the drone camera operates as a "scopic regime": a techno-cultural mediated visuality (Gregory, 2011: 190) which provides drone pilots with a god-like view; a hypervisuality which abolishes distinctions between "permission and prohibition, presence and absence" (Gordon, 2008: 16). This omnipotent and omnipresent visuality not only empowers drone pilots, but reinforces the dehumanizing context projected onto drone vision via the visual culture. The deified ontology of drone vision is a privileged visuality which only 'technologically advanced' Western soldiers have access to. Reinforcing Orientalist, colonialist and dehumanizing tropes that those under the drone camera's gaze, are an underdeveloped and 'backwards' population, whose lives are more expendable than Western citizens. Indeed drone pilots have referred to themselves in these deified terms (Martin and

Sasser, 2010: 3). As former drone pilot Brandon Bryant argues, "We are the ultimate voyeurs... the ultimate peeping toms." (Schei, 2014) Thus, visuality and drone vision produce "relations of power" (Campbell, 2007: 361) between the drone pilot and individuals beneath. Drone vision and drone camera therefore enables killing, and war to be fought in this way.

## *Drone Vision and Networked Warfare*

Finally, the prevailing literature contends that the drone camera and drone vision function to alleviate the psychological trauma associated with killing in war by creating a condition of possibility, whereby killing-by-drone becomes a networked phenomenon. A sophisticated telecommunications infrastructure enables drone vision to be disseminated to a plethora of personnel besides the drone pilot. The UAV can be more accurately described as an Unmanned Aerial System (UAS), which although pilotless, is operated and supported by several hundred personnel in a variety of locations (Gregory, 2011: 189). The networked nature of drone vision eases the psychological burden of killing by enacting a 'division of killing' among the drone pilot and a multitude of individuals, dissolving and dividing the moral culpability between them. On the most basic level, moral responsibility is divided between the drone pilot and their sensor operator who is responsible for positioning the drone's laser onto the target, for the missile to follow, once the drone pilot has pulled the trigger (PBS, 2013). Thus, killing cannot occur without sensor operator and drone pilot operating together. Drone vision is also relayed to ground troops, via ROVER laptops, who may weigh in on the decision-making calculus. More importantly, numerous senior commanders, mission controllers and military lawyers operating at CENTCOM's Combined Air and Space Operations Center (CAOC) in Qatar, who ultimately grants permission to kill (Gregory, 2011: 194).

This section has demonstrated two ways in which the drone camera and drone vision enable killing in war. Firstly, the drone camera distances the drone pilot both spatially and morally from the consequences of their actions, and reinforces dehumanizing discourses embedded within a visual culture, which impacts how drone vision is perceived.

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

Secondly, the ability for drone vision to be networked may serve to rationalise killing-by-drone by dividing the responsibility between a plethora of agents. However, drone vision is far more complicated than the prevailing literature suggests, and may function to render killing-by-drone a psychologically traumatic experience. The consequent section argues that the ontology of drone vision serves to intimately connect the drone pilot to their actions, and is deficient in ways which might cause collateral damage. Both these factors increase the psychological costs of killing-by-drone, and new developments to the drone camera are assessed to determine whether they overcome these costs.

## Drone Vision and the Intimacy of Killing

This section demonstrates that drone vision is far more complex than the orthodox literature suggests. Whilst the drone camera and drone vision can function to reduce the psychological burden of killing-by-drone, their impact is far more nuanced. The ontology of drone vision not only creates a “voyeuristic intimacy” (Power, 2013) between drone pilot and death, but also has a number of limitations which can result in collateral damage. Both these dynamics have the potential to psychologically traumatise the drone pilot.

Firstly, although drone vision and the technological nexus that produces it might spatially and morally distance the drone pilot from the consequences of their actions, certain features of its ontology intimately connect the drone pilot to their killing. Contrary to other militarised distancing apparatuses, such as fighter jets, whose pilots escape from the destruction they have caused; drone pilots perceive the deadly aftermath of their actions unfold in real-time via video feed. The dehumanised decontextualised birds-eye view of the human body quickly disintegrates into a plethora of skyward facing limbs and body tissue. Night operations render this violent imagery more traumatic by the thermal imaging camera’s ability to display the hot-white ‘splatter’ of blood. Operational procedures often require the drone pilot to remain within the cockpit to monitor the aftermath and confirm fatalities. Thus, the drone pilot is rendered voyeur; witnessing life being extinguished as body parts rendered white via infrared slowly fade to darkness. Therefore, drone vision intimately connects the drone pilot to their killing, which can prove psychologically devastating. As Singer (2010) summarises “you’re further away physically but you can see more”.

Secondly, drone vision is far from perfect, and has a number of limitations which can potentially cause collateral damage. Although the MSTS camera can establish a voyeuristic intimacy between the drone pilot and death, drone vision is still fallible. Drone vision is often compromised by meteorological conditions and technological defects, such as bandwidth limitations and datalink degradation, that produces drone vision of such low clarity that drone pilots are unable to differentiate between combatant and civilian (Webb et al, 2010: 36). Drone vision can, therefore, be misinterpreted (Benjamin, 2013: 27), causing collateral damage and even friendly fire (MacAskill, 2011). The risk of collateral damage is compounded by the MSTS camera’s limited focus: by concentrating on a small geographical area in great detail, the MSTS camera and resultant drone vision omits the wider context from the decision-making process (Stahl, 2013: 663). Gregory (2011: 198) notes the “horror” of one drone pilot as he saw two young boys cycle into the visual field before a missile struck its designated target. Finally, the problem of latency means that there is a 1.8 second delay between movement on the ‘ground’ and the arrival of drone vision to the drone pilot’s monitor (Mazzetti, 2012; Benjamin, 2013: 26). This again increases the margin for error.

While a visual culture laden with dehumanizing discourses that reduces humans to ‘terrorists’ and ‘enemies’ might enable drone pilots to kill, once they learn that those killed were in fact innocent civilians, the ‘veil of deniability’ constructed by these dehumanizing tropes is removed. Their deaths are closely felt by the drone pilot outside the legitimating rationale provided by the visual culture, and for the majority, this is psychologically devastating. Whilst advocates of drone warfare often revere the sanitised, precise and discriminate nature of drone warfare (Phillips, 2010), legitimating it by elevating it onto a “virtuous” plane (Der Derian, 2009), this interpretation is far from reality — collateral damage regularly occurs under the drone camera’s gaze.

However, the technological infrastructure of the drone camera is in constant flux and recent developments to the drone camera, namely the ARGUS-IS might provide a panacea to these limitations. Though information regarding its deployment remains classified, these developments represent a new generation of drone vision, and their analysis qua the psychological impact of killing is worth examining. The ARGUS-IS drone camera promises to greatly expand

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

the voyeuristic capabilities of the MQ-9 Reaper. Utilizing a 1.8 gigapixel camera, the ARGUS-IS stitches multiple images together to drastically broaden drone vision (BAE Systems, 2013). The ARGUS-IS not only produces higher definition footage than the MSTC drone camera, but can relay multiple drone visions to the drone pilot, one intimately attached to the target, and another 'zoomed out' to provide the wider context. The ARGUS-IS resolves the limitations of MSTC drone vision by improving both image quality and field of view, and thus, reduces the probability of collateral damage, and psychological trauma being inflicted against the drone pilot. However, decreasing the probability of collateral damage by qualitatively improving drone vision, may unintentionally facilitate the voyeuristic intimacy which encourages psychological trauma. Producing higher definition drone vision, may mean that death is no longer wielded against the ambiguous pixelated shapes, that the MSTC camera occasionally produces, but rather through a high-definition corporeal nightmare, which may prove even more psychologically damaging. Thus, new developments may continue to mimic contemporary drone vision in both disabling and enabling one's psychological inhibition toward killing.

## Conclusion

This essay has demonstrated that the drone camera, and the drone vision it produces, has a complex and nuanced impact on the psychology of killing in war. Drone vision is a dynamic phenomenon both reinforcing and destabilising one's psychological inhibition against killing. The prevailing literature argues that the drone camera alleviates any psychological resistance to killing in war, by spatially and morally distancing the pilot from their killing and by rendering killing-by-drone a networked phenomenon. This essay has attempted to challenge this view. It has shown that killing via drone vision is complexly mediated by a number of factors, including a broader visual culture, and a nexus of technologies which are liable to fluctuate. Whilst the former establishes relations of power between drone pilot and their targets, which enables killing, technological improvements to the latter may serve to increase the psychological trauma of killing-by-drone. Thus, drone vision is a complex and unique visuality within the context of war, and one which deeply impacts on the politics of killing in contemporary warfare.

## References

- Agamben, G., 1995. *Homo Sacer: Sovereign Power and Bare Life*. Stanford: Stanford University Press.
- Asaro, P.M., 2013. The labor of surveillance and bureaucratized killing: new subjectivities of military drone operators. *Social Semiotics*, 23(2), pp.196-224.
- BAE Systems., 2013. ARGUS-IS Brochure. Columbia, MD: BAE Systems. Available at: <file:///C:/Users/User/Downloads/baes\_162769.pdf> [Accessed 06 May, 2014].
- Benjamin, M., 2013. *Drone Warfare: Killing By Remote Control*. London: Verso.
- Campbell, D., 2007. Geopolitics and visuality: Sighting the Darfur conflict. *Political Geography*, 26(4), pp.357-382.
- Casey, E., 2000. *Remembering: A phenomenological study*. Bloomington: Indiana University Press.
- Der Derian, J., 2009. *Virtuous War: Mapping the Military-industrial-media-entertainment Network*. 2nd ed. New York: Routledge.
- DeShaw Rae, J., 2014. *Analyzing the Drone Debates: Targeted Killings, Remote Warfare, and Military Technology*. New York: Palgrave Macmillan.
- Finn, P., 2011. The Do-It-Yourself Origins of the Drone. *The Washington Post*, 24 December, 2011.
- Foster, H., 1988. Preface. In: H. Foster., ed. 1988. *Vision and visuality*. Seattle: Bay Press. pp.ix-xiv.
- Franklin, J., 2012. US military using lightweight mini-drones launched from battlefield. *The Guardian*, 12 June, 2012.

# Death from above: Drones, Visuality and the Politics of Killing

Written by Frederick Neve

Available at: < <http://www.theguardian.com/world/2012/jun/12/usmilitary-mini-drones-battlefield>> [Accessed 21 April, 2014].

Gordon, A., 2008. *Ghostly Matters: Haunting and the Sociological Imagination*. Minneapolis: University of Minnesota Press.

Gregory, D., 2011. From a View to a Kill: Drones and Late Modern War. *Theory, Culture & Society*, 28(7), pp.188-215.

Grossman, D., 1996. *On Killing: The Psychological Cost of Learning to Kill in War and Society*. New York: Back Bay Books.

MacAskill, E., 2011. Two US Soldiers Killed in Friendly-fire Drone Attack in Afghanistan. *The Guardian*, 12 April, 2011.

Martin, M., and Sasser, C.W., 2010. *Predator: The Remote-Control Air War over Iraq and Afghanistan: A Pilot's Story*. Minneapolis: Zenith Press.

Mazzetti, M., 2012. The Drone Zone. *The New York Times*, 6 July, 2012. Available at: <<http://www.nytimes.com/2012/07/08/magazine/the-drone-zone.html>> [Accessed 14 April, 2014].

McSorley, K., 2013. War and the body. In: K. McSorley., ed. 2013. *War and the Body: Militarisation, practice & experience*. London: Routledge. pp.1-33.

NASA, 2010. Advancements in Full-Motion Video for Military UAS Surveillance Applications. *NASA Tech Briefs*, 01 September, 2010. Available at: < <http://www.techbriefs.com/component/content/article/8504>> [Accessed 22 April, 2014].

PBS., 2013. NOVA: Rise of the Drones. [Documentary] Available at: <<https://www.youtube.com/watch?v=IOzCiCl05Ec>> [Accessed 22 April, 2014].

Phillips, M., 2010. Civilians in Cross-hairs Slow Troops. *The Wall Street Journal*, 22 February, 2010. Available at: <<http://online.wsj.com/news/articles/SB20001424052748704751304575079741450028512>> [Accessed 06 May, 2014].

Power, M., 2013. Confessions of a Drone Warrior. *GQ Magazine*, October 23, 2013. Available at: <<http://www.gq.com/news-politics/big-issues/201311/drone-uav-pilotassassination?printable=true>> [Accessed 05 May, 2014].

Protevi, J., 2013. Affect, agency and responsibility: the act of killing in the age of cyborgs. In: K. McSorley., ed. 2013. *War and the Body: Militarisation, practice & experience*. London: Routledge. pp.128-137.

Rogoff, I., 2000. *Terra infirma: Geography's visual culture*. London: Routledge.

Schei, T.H., 2014. Drone. [Documentary] 10 April, 2014.

Singer, P., 2010. The Soldiers Call It War Porn. *Spiegel Online*, 12 March, 2010. Available at: <<http://www.spiegel.de/international/world/interview-with-defense-expert-p-w-singer-the-soldiers-call-it-war-porn-a-682852.html>> [Accessed 05 May, 2014].

Stahl, P., 2013. What the drone saw: the cultural optics of the unmanned war. *Australian Journal of International Affairs*, 67(5), pp.659-674.

## **Death from above: Drones, Visuality and the Politics of Killing**

Written by Frederick Neve

Stern, D., 1985. The interpersonal world of the infant. New York: Basic.

Turse, N., 2008. The Complex: How The Military Invades Our Everyday Lives. London: Faber and Faber Ltd.

Webb, D., Wirbel, L., and Sulzmann, B., 2010. From Space, No One Can Watch You Die. Peace Review: A Journal of Social Justice, 22(1), pp.31-39.

Zucchino, D., 2010. Drone pilots have a front-row seat on war from half a world away. The Los Angeles Times, 21 February, 2010. Available at: <<http://articles.latimes.com/2010/feb/21/world/la-fg-drone-crews21-2010feb21>> [Accessed 14 April, 2014].

*Written by: Frederick Neve  
Written at: University of Bristol  
Written for: Dr. Joanna Tidy  
Date written: May 2014*