

## Central Lancashire Online Knowledge (CLoK)

Title	The citizen drone: protest, sousveillance and droneviewing
Type	Article
URL	<a href="https://clock.uclan.ac.uk/37280/">https://clock.uclan.ac.uk/37280/</a>
DOI	<a href="https://doi.org/10.1080/1472586X.2020.1843285">https://doi.org/10.1080/1472586X.2020.1843285</a>
Date	2020
Citation	Zuev, Dennis and Bratchford, Gary (2020) The citizen drone: protest, sousveillance and droneviewing. <i>Visual Studies</i> , 35 (5). pp. 442-456. ISSN 1472-586X
Creators	Zuev, Dennis and Bratchford, Gary

It is advisable to refer to the publisher's version if you intend to cite from the work.  
<https://doi.org/10.1080/1472586X.2020.1843285>

For information about Research at UCLan please go to <http://www.uclan.ac.uk/research/>

All outputs in CLoK are protected by Intellectual Property Rights law, including Copyright law. Copyright, IPR and Moral Rights for the works on this site are retained by the individual authors and/or other copyright owners. Terms and conditions for use of this material are defined in the <http://clock.uclan.ac.uk/policies/>

## The Citizen Drone: Protest, Sousveillance and Droneviewing

### Abstract

In this article we will discuss the use of drones, as well as the visual simulation of drone afforded aesthetics, by activists, artists and protesters. We use the existing literature of surveillance studies and visual studies to examine how exactly a drone-afforded visibility emerges and how it mediates the visibility of a particular community or space of contention. We draw on the concepts of “surveillance capacities” and (counter) visibility practices to analyze the process and production of drone (and drone-simulated) *counter surveillant artist/activist visibility*. The article makes several key points. The first one concerns the construction of protest space and the protest site volumetrically from the airborne perspective of the *citizen drone* via an assemblage of artist/activist practices. These practices include the use of drones, as well as drone-simulated imagery. The latter includes, DIY aerial camera rigs attached to kites and the use visual social media platforms such as Instagram to curate otherwise less visible military drone geographies more ‘real’ and proximate. The second concerns the visibility of subjects engaged in the protest space. And finally, we elaborate how events are presented dynamically (rhythmically) through drone videos and a drone-afforded visual grammar. Our assumption is that drones, as well as drone-simulated imagery allow the user to generate a hybrid participative (inclusive) visibility that makes protest more spectacular through its volumetric vision, subverting the visibility of control while striving for visibility of recognition. Overall, this article seeks to further elaborate on the visual turn within sociology, specifically in relation to what are now commonplace volumetric practices of power, representation and participation.

Dennis Zuev

Assistant Professor at City University of Macau, China and Senior Researcher at CIES-ISCTE, IUL, Lisbon, Portugal. He is also an associated researcher at Instituto do Oriente, University of Lisbon, Portugal.

Gary Bratchford

University of Central Lancashire, Preston, United Kingdom

Dennis Zuev co-edited *Sociology of the Visual Sphere* (together with R. Nathansohn, Routledge, 2013) and co-authored *Visual Sociology: Politics and Practices in Contested Spaces* (together with G. Bratchford, Palgrave MacMillan, 2020). He has conducted visual sociological research on YouTube, tourist practices and protest events.

Gary Bratchford is President of the International Sociological Associations (ISA) Visual Sociology Research Committee (RC57), Co-Editor of *Visual Studies Journal* and Co-author (with Dennis Zuev) of *Visual Sociology: Politics and Practices in Contested Spaces*: Palgrave MacMillan (2020).

Corresponding author email - Dennis Zuev (The Citizen Drone: Protest, Sousveillance and Droneviewing), [tungus66@gmail.com](mailto:tungus66@gmail.com)

## Introduction

The practices of political activism are constantly changing and are quick to incorporate new media and visual technologies that enhance the “repertoires of contention” (Tilly, 1986) and professionalize the organization of contentious performances and protest in general (Doerr et al., 2013). One relatively recent change is the increasing use of telepresence technologies, which afford new capabilities for remote participants to be part of the event/protest (Hamilton et al., 2018) or participate in emotionally-charged narratives of dissent. Despite the growing literature on the use of drones as technological devices, the actual processes of visual production by drones, their contentious performances, and aerial visual storytelling in general have all largely been overlooked. In this article, we aim to explore the visual politics of drone video production and drone-simulated imagery, focusing on the use of drones and other airborne aerial methods, such as DIY kite rigs by protesters, activists and artists.

The Unmanned Aerial Vehicle or “drone” is no longer a technology that represents the “future” of surveillance and “sci-fi” dystopias populated by robots and intelligent machines. In 2016 approximately two and a half million drones were sold, while revenues from drone sales are expected to top \$12 billion in 2021 (Business Insider, 2016). Drones are becoming a part of everyday life for a multitude of populations and communities, blurring the boundaries of in/visibility. Military-turned-consumer electronics permeate and “mediate” everyday life and atmospherics, structuring the way people communicate, interact and position themselves (Parks, 2017) and, not least, engage in a co-constituted act of watching and surveillance.

As “aero-visual techniques of power” (Klauser and Pedrozo, 2017b) drones enable a potentially perpetual view of human interaction that can be tracked and recorded continuously via media presence and surveillance technology. Human thermal presence, interactions and movement can be detected, scanned, observed, traced and registered by diverse technologies, which can be mediated by a range of users. Such mobile eyes, including surveillance airplanes, drones and the growing fleet of private commercial CubeSat satellites (Financial Times, 2018) ensure one can be recorded and gazed upon at any time. No one is guaranteed invisibility from the sky, regardless of social status; any single individual can fall under the gaze from above in the era of post-panoptic liquid surveillance (Bauman and Lyon, 2013), as the view from the sky is no longer only the preserve of the governments and its agencies.

This aerial extension of the gaze and “endless loop of watching” (Parks, 2017) have become everyday practices that are largely facilitated by the ubiquity of drone technology. No longer are drones exclusively a military application, but a technology that is increasingly used by tourists, researchers, activists, artists, radical militants, alternative and mainstream news media and humanitarian agencies. The goal of this paper is to examine how a drone-afforded visibility emerges and how it mediates the visibility of a particular community or space of contention. We draw on the concepts of “surveillance capacities” and (counter) visibility practices and advance the discussion of the politics of droneviewing (Zuev and Bratchford, 2020) to analyze the process and production of drone (and drone-simulated) *counter surveillant visibility*. Activist drone operators as well as lay users and militarily-trained operators are all involved in this production. In each case, drones offer a radical shift in spatial perception, particularly for non-military personnel, replacing the physical engagement with space with an alternate mode of perception – a newly-networked form of visibility (Gregory, 2016). While discussing the politics of aerial vision we acknowledge the essential point

made by some researchers that the drone is not merely an object and a visual tool, but a multisensorial assemblage of materiality and practices. In this article, we focus on the new visibility of the drone without ascribing to it the centrality of the ocular. At the same time, with geographers and anthropologists asserting the complexity of the drone as an assemblage (Garrett and McKosker, 2017), the meaning of some of its integral parts, such as droneviewing and drone-afforded visibility, have been under-explored.

### **Drones and vertical security**

Several studies have emphasized the growing militarization of law enforcement agencies, specifically the US (Shaw, 2016a; Wall, 2013, 2016), UK and Chinese police forces; dedicated drone police units were launched in 2017 in the UK (BBC, 2017<sup>1</sup>) and there has been an increased use of drones in China's domestic airspace to enhance its policing capabilities in the Xinjiang Autonomous Region (Quartz, 2015<sup>2</sup>). While China's use of drones (disguised as birds) and on-the-ground CCTV for surveillance has been widely discussed in the context of its policing of ethnic minorities along the western frontier, many Chinese cities are the subject of increasing surveillance, with eight out of the top ten most-surveilled cities in the world located in China (The World's Most Surveilled Cities, 2019). In the US, drones have become more popular with law enforcement agencies than with any other public safety agency (Gettinger, 2018). Interestingly, among the drones acquired by US law enforcement, eighty percent were made by Chinese company DJI, the global leader in manufacturing civil and hobbyist drones as well as anti-drone software and security (Keysar, 2020), with DJI accounting for seventy percent of civil drones produced worldwide (Forbes, 2016).

Drones have been used as part of extraterritorial policing systems that are, at times, administered by agencies beyond the territorial boundary through which the drones' vision occupies, acting as a tool for penal executions as much as to pacify restive populations below (Abu Saif, 2012; Bashir and Crews, 2012). Drones have become a ubiquitous part of popular discourse and have had a transformative effect on the political landscapes of nations such as Pakistan (Shah, 2014), Afghanistan (Lila, 2015) and Somalia (Parks, 2017).

In an effort to capitalize on drones' "surveillance capacity" (Rule, 1973; Lyon, 1994) and capabilities of instantaneous visibility and firepower, some of those nations with the smallest armies, such as Azerbaijan, make up a large portion of the consumer market due to their ongoing border conflicts and inability to have advanced arsenals for border patrols. Yet even those with the largest military budgets employ drone technologies as a means of surveying and patrolling borderlines. While drones have operated along the US-Mexican border (Gusterson, 2014) since 2005, Israel's management of Gaza and its population (Dawes & Tawil-Souri, 2014; Weizman, 2008) since 2005 has been more vertical and remote than a traditional "horizontal" occupation of the land. The US's use of drones along the Mexican border, Israel's in Palestine, and Azerbaijan's in the Nagorny Karabakh region represent a shift in the domestic deployment of military drones as part of the rhetoric of the "homeland security industrial complex" (Risen, 2014:85). In the Arctic,

---

<sup>1</sup> <http://www.bbc.com/news/uk-england-devon-40595540> .Accessed 15.01.2019

<sup>2</sup> <https://qz.com/256104/china-is-now-using-drones-to-catch-terrorists-in-xinjiang/> Accessed 25.01.2019

where the tensions are in no way less palpable, drones are conceived as the only way for the Canadian defense forces to counteract the “spying” drones of potential aggressors (CBC, 2017).<sup>3</sup>

While the military sector leads in the use of UAVs (Goldman Sachs, 2016), there are several other different clients that are eager to utilize drones. According to Business Insider’s *Drone Project Report*, photography is the top industry using drones, and its use of drones to visualize events and protests is growing. Despite drones being used predominantly by the photography industry, the growing research literature on the use of drones as technological devices has neglected to explore in detail the visual production of drone videos and the implicit politics of this visual output. There is a growing tension over the ownership of the “droneview” and the politics of droneviewing. With the growing domestication of drones (Boucher, 2015), issues of the control of trespassing drones, and of activist drones counteracting police violence and visualizing protest events, have come to prominence. There is an urgent need to unravel the complexity of emerging forms of drone-assisted vertical visibilities in order to understand the transformation in surveillance and counterveillance practices in modern society.

In the next section, we provide a literature review in order to delineate the conceptual field of drone afforded visibilities. Then we consider several instances of this new visibility, focusing on the analysis of cases of drone-assisted policing, as well as activist counterveillance and the underlying politics of droneviewing.

### **Politics of droneviewing and new visibilities**

There are already dozens of studies on drone “theory” (Chamayou, 2015), drone geography (Gregory, 2014) and the anthropology of drones (Gusterson, 2014) which primarily discuss the use of drones in warfare at a distance (Benjamin, 2015; Rae, 2014; Rogers and Hill, 2014). Few studies have ventured beyond the military gaze of the drone (Bousquet, 2018; Gregory, 2011) and the morality of remote killing (Himes, 2015; Strawser, 2014) but the interest in other institutional contexts of drone use has grown fast among geographers (Birtchnell and Gibson, 2015, Klauser and Pedrozo, 2017a). Scholars have emphasized the need to look beyond the “terror” and barbarism inflicted by the drone and further examine its ability to explore atmospheres and witness the edges of social or geographic entities (Fish, 2019), as well as to engage with the drone as a revolutionary, multi-sensory device that is not limited to enhancing our visual perception alone (Garrett and McCosker, 2017). Surprisingly, few new media scholars and visual sociologists have addressed the drone and its visual aesthetics or “visual grammar” (Zuev and Bratchford, 2020). The aesthetic regime of the drone remains unexplored despite the fact that it is already being embedded in new forms of “citizen journalism” (Blaagard, 2015) and tourism experiences.

In the area of social movement studies, there exists a growing body of literature combining the use of visual analysis with social movement theory – specifically research on protests (see Daphi et al. 2013 on surveillance and activism, and Zuev, 2010, 2013 on the visual analysis of protest rituals) – which can further contribute to the understanding of droneviewing in this context. Two key collections – one by Doerr et al. (2013) and another by McGarry et al. (2020) – attempt to synthesize visual analysis with social movement studies. While Doerr et al. (2013) suggest that the visual becomes the site of struggle for social movements, McGarry et al. (2020) contend that aesthetics in global protest comprise a range of performances, where political activism imbued with art becomes “creative activism”. While social movement theory, informed by the cultural turn in social movement studies (Baumgarten et al. 2013), places greater emphasis on the visual culture of protest, scholarly work in this field, and those noted above, can offer tools to strengthen the methodological push to unwrap droneviewing and drone-afforded visibility from a visual sociological perspective (Zuev and Bratchford, 2020).

To think about the consumption and use of drones in the wider, lay community, from hobbyists to activists, provokes a host of new considerations. These centre specifically on the new visibilities afforded by

---

<sup>3</sup> <http://www.cbc.ca/news/politics/arctic-spy-drones-a-defence-concern-as-russia-expands-reach-1.2953027>  
Accessed 06.01.2019

droneviewing, and the function and use of drone imagery. Although the role of the drone in urban surveillance (Greene, 2015; Waghorn, 2016) and the emergence of the “drone city” has received its fair share of scholarly attention (Jensen, 2016; Shaw, 2016b), little has been said on the significance of processes of spectacularization from above in terms of the visual grammar of drone-assisted narratives that present or re-present images as constitutive data. This visualization from both a distance and an angle that have long been privileged vantage points reserved for an elite few leads us to a set of questions:

- Is this form of seeing accessible to all?
- What can or should the democratisation of aerial vision and the myriad scopic and networked regimes offer?
- How do these current and future dynamics affect how we might see, and be seen within, a multiplicity of landscapes?

### **Methodology and Visual Analysis**

In what follows we examine various instances and forms of airborne and artist-simulated activism, and thereafter, specifically focusing on cases where drones have been used explicitly to question the policing of protests. Here drone-afforded visuals appear as photographs or videos and have been circulated via visual social networks as critical projects, in exhibitions and on YouTube, thus extending the scope of visibility for those sometimes unseen or marginalised during protests or political action. The drone is thus a medium for – and integral part of – the protest assemblage as it participates in documentation, storytelling and advocacy. However, its “activist” role of a citizen-witness is more salient as it trespasses on the contested space, traditionally the domain of police power and police surveillance.

The positionality of the researcher here is an important methodological point to consider. In this case, neither author is an activist, nor have they been involved in protest themselves, nor have they used drones to visualize protestor surveillance. But they are familiar with the drone as a socio-technological assemblage. The analysis of available visual data is one of the common avenues suggested in traditional visual analysis (Pauwels, 2015) along with researcher-generated visual data and visual data generated upon the researcher's request. Visual data are thus selected not to embellish our argument but to support it visually and to distinguish different regimes of drone-afforded visibility. While there are diverse strategies for and approaches to visual analysis (Zuev and Bratchford, 2020), here we follow a logic of selecting locations oriented by their diversity (Israel, USA and Hong Kong) and guided by our familiarity with these locations due to previous fieldwork – and thus our ability to provide a broader contextual analysis. In addition to these considerations, the cases of the Standing Rock and Hong Kong protests are chosen as examples of two distinct narratives – one related to drones used in open nature (the prairies of North Dakota), and the other set in a confined urban environment (Hong Kong) – as well as because they provide distinct perspectives on protest policing<sup>4</sup> and control.

### **Visual Activism and the Airborne Image**

So far very few scholars have interrogated airborne activism's ability to scrutinise uneven power at ground level, to point to the uneven distribution of power in the sky above. In the follow section, we briefly address three varied forms of artist produced forms of droneviewing.

The first can be found in the innovative approaches taken by Israeli scholar-activist, Hagit Keysar who employed DIY aerial photography as a participatory tool that provided a “spatial testimony” (Keysar, 2018) over different regions of Israel/Palestine. Through a collaborative, process-based activity with local Palestinian residents in a Jerusalem suburb under Israeli control, Keysar playfully but critically engaged with the vertical spaces above a set of contested geographies. The use of the kite and camera rig, rather than a more “conventional drone”, pointed to the technological disparity between Palestinians and Israelis,

---

<sup>4</sup> On protest policing see Della Porta et al. 2006; on visibility and new modes of policing see Spiller and L’Hoiry (2019)

whereby only Israeli-governed drones are allowed to fly in Israel/Palestine, while Palestinians are unable to fly drones at all (Keysar, 2018). Thus, the physical artefact, as well as the act of flying, becomes part of a more contentious performance, which helps to build openness and transparency.

The inexpensive DIY aerial photography produced by Keysar mimics the performativity of the drone, enabling Keysar and her Palestinian collaborators to map the contested space for civic and political purposes. Entitled *A Civic View from Above*, the inexpensive DIY droneviewing is often produced by attaching cameras to kites. Keysar's work, and the images produced, seek to unpick the dominant political narratives embedded within East Jerusalem and Palestinian villages in the West Bank (**Figure 1**).

Playing with the notions of power and authority implicit in the control and reproduction of space from above, Keysar's DIY images – made from digitally knitting together photographs of the landscape taken from a digital camera attached to a kite with open source programmes such as Mapkitter – question the authoritative production of photography and how we read what is shown to us.

**Insert Figure 1 Here:**

DIY balloon photography created collaboratively in the framework of the project Jerusalem We Are Here, 2014. Knitted photomontage: Hagit Keysar/Dorit Naaman

Keysar's images are independently produced datasets from above that seek to supersede Google's low-resolution images of Israel (a resolution of two metres per pixel in comparison to Keysar's five centimetres per pixel) and its inadequate visualization of Palestinian topologies. Because of the open-access nature of the image production, the "bird's eye imagination of the space connects people and places" in ways that the authorities, official documents and Google do not.

In a similar vein, Anjali Nath discusses the iPhone app Metadata+, which uses remote witnessing to facilitate the vertical transparency that brings into public view the distant violence inflicted by military drones in Pakistan, Somalia or Afghanistan (Nath, 2016). The use of data-setting and open source community users, like those of Metadata+ monitor and track distant warfare on their smartphones, in essence bringing the otherwise unseen or invisible events related to drone use into an immediate and proximate context of smartphone engagement, like any other app. Similarly, artist and theorist James Bridle used the social-media platform Instagram between 2012 and 2015 to create Dronestagram (**figure 2**), an interventionist artwork that sought to render lesser-known geographic spaces visible. Blending immediacy and intimacy, Bridle searched drone strike records from the Bureau of Investigative Journalism, which compiles drone strike reports from Pakistan, Yemen and Somalia. In an effort to make lesser-seen communities, actions and locations more visible, a little closer and a little bit more real.

**Insert Figure 2 Here.**

Screen grab of James Bridle's Instagram account, 'Dronestagram' (accessed January 25 2020).

Similarly, others, including video-artist, Omar Fast (5000 Feet is Best, 2011)<sup>5</sup> have played with the vertical illusion of god-like omniscience, like that presented by Bridle via the affordance of visual social media platforms (he also used Tumblr and Facebook). Fast, Like Bridle speak to the immensity of foreign geographies under surveillance while hinting that drone pilots are often culturally unfamiliar with those that they target and kill. Along with the trappings of an overactive militarised gaze, this has marred the visual and logical judgement of the drone operator when droneviewing civilians rather than terrorists or insurgents. So, they may see weapons instead of everyday objects, or misread the action or intent of a gathering as deliberately threatening. In addition to the dehumanising distance of the drone and its visual relay, the operator and the disconnection of responsibility shared out along the operational chain of command further complicate the representational nature of militarised droneviewing, leading to clichéd representational tropes of the “other” and the assimilation of an entire population as threatening.

Such an example is manifestly explored in the photo-series *Targeted Killing* (2010) by photographer Miki Kratsman. Like renowned Irish photographer, Richard Mosse, Kratsman used a military-grade photographic technology, in this instance a drone lens adapted for his digital camera, to capture Palestinians without their knowledge from a rooftop close to his office.<sup>6</sup> Peering into the Palestinian village of Issawiya from his vantage point in neighboring Jerusalem, the aesthetic and framing of Kratsman’s work speaks the language of surveillance whilst problematizing droneviewing as an asymmetric practice inherent in specific cultures, places and geographies. After taking the photo, Kratsman then re-photographs the image from his computer monitor to produce a flat, grainy aesthetic of suspicion. To borrow from Graham’s (2016) and Miller’s (2020) thinking, the subjects become instantly orientalist and weaponised while the series title, *Targeted Killing*, further frames what we see and how we should read the image within a Western discourse of terror and threat. The aesthetic of the images and topology, including remote looking, dusty paths or lone male figure and tightly framed shots of cars and pick-up trucks have the assimilatory potential of widening the geographic context to other possible spaces of “threat” including Pakistan or Afghanistan. As Derek Gregory notes (2017), citing Lisa Parks, “drone use... has generated a new, disenfranchised class of ‘targeted’ people. Particular inhabitants in the federally administrated tribal areas of Pakistan, Yemen, Somalia and the Occupied Palestinian Territories... have become part of a targeted class simply because they live in areas in which terror subjects ‘may operate’<sup>7</sup>.

Moving further East, the proliferation of drones as a technology for domestic policing in troubled areas – as demonstrated by their deployment by the Chinese authorities in Xinjiang Uyghur Autonomous Region – raises issues of another kind of visibility: the transparency of domestic droneviewing in states other than the long-standing strategic partners of the US (Israel, the UK). The politics of global surveillance and the use of drones, coupled with national might, enable this form of extraterritorial policing and suggest that there will exist tension regarding those extra-judicial powers that at present can be exercised by some nation-states while other, less powerful states and regions are technologically or economically unable to compete. While the macropolitics of droneviewing is an inextricable part of the global infrastructure of

---

<sup>5</sup> A reference to the optimum altitude at which a US Air Force drone can identify targets on the ground.

<sup>6</sup> <http://www.bjp-online.com/2017/08/rifles-surveillance-and-civilians-in-miki-kratsmans-the-resolution-of-the-suspect/#closeContactFormCust00> Accessed 12.01.2019

<sup>7</sup> War at a Distance: Derek Gregory – <http://www.youtube.com/watch?v=WUDaZr5JScs> Accessed 10.08.2019



surveillance, the socio-technological side requires our full attention, as in many countries, military or law enforcement drones are actively opposed or supplemented by civil or amateur drones operated by citizen journalists and citizen counterveillance initiatives.

### **Surveillance from below with the Eyes Above**

Recent studies of drones used by the activists to construct the “protester panopticon” (Waghorn, 2016) suggest that we view the protest space volumetrically, with complex power relations operating across multiple dimensions – for instance between aviation authorities and amateur users and citizen journalists or activists and police. From an activist perspective, the use of the drone has multiple purposes; it can be employed as a tool of recording and dissemination, as a way of witnessing, and also to generate evidence. In an extension of Steve Mann’s notion of “sousveillance” as a form of surveillance from below, the notion of the drone as a co-opted technology further decentralises the idea that observation is asymmetric. Defined by Mann et al. (2003) as a means of “recording an activity by a participant in the activity to produce transparency in all directions... [in turn] seeking to reverse the otherwise one-sided panoptic gaze”, sousveillance points to a practice that – through the use of a camera and the embodied presence of an activist or observer in the protest arena – might reclaim visibility as a form of resistance to top down governmental surveillance. Applying this notion to the drone, as well as to the hand-held camera or camera phone, identifies another shift: the battle over perceptibility is now airborne as well as taking place on the ground. The multiple modalities of drone use, including cheap “disposable” drones such as the “occuopters” used during the Occupy Wall Street protests in 2011 (Culver, 2014), can claim the aerial space of the protest, avoiding the “frozen zone” of on-the-ground cordons used to limit and/or reduce the gaze of the media or protesters in a contested area whilst avoiding concerns about drone damage or confiscation (Keysar, 2018). According to Jacques Rancière, politics is both a “question of aesthetics and a matter of appearances” (1999: 74). With this sentiment in mind, if we begin to think about droneviewing as a way to intervene in the regimes of visibility that seek to shape and control our perception of politics and its actions, then the use of drones and volumetric vision could help rearticulate how constructed visibilities are closely aligned to the distribution of power. This is perhaps most evident in an emergent field of technoscientific visual activists, artists and scholars.

Here we can look to the work of experimental geographer Trevor Paglen and artist/writer James Bridle, who explore, amongst other things, “how notions of place are produced through particular power relations that privilege certain things happening in particular places at specific times” (Miller, 2020). Others, like filmmaker Zach Blas, media artist Hasan Elahi, and moving image artist Hito Steyerl, all in some way examine the interlinking notions of visibility, power, data and the militarisation or politicisation of vision. While they may not all use drones, their practice as a noteworthy example of a burgeoning field, helps to shift how the visual is used, from straightforward documentation to a form of (artistic) strategic communication Meg McLagan (2006). Such an approach, facilitated by social media platforms, live interventions in specific spaces and geographies, or through more formal gallery settings, help to enable counter visibilities that widen the space in which politics can be conceived, performed and seen.

### **Droneviewing and Refugees**

Making this shift from documentation to strategic communication is just one of the modalities related to the tactical use of drones at sites of protest and seeks to alter public opinion through a redistribution of the often in/visible. With Europe struggling to accommodate refugees from Syria, attitudes and policies towards them have hardened. While peace talks remained unproductive, and hundreds of thousands of people were fleeing the country, a video produced by DroneWorks camera-man Alexander Pushin for Russian State Television Channel VGTRK aimed to show the view from above – the landscape of the devastated country as a reminder of the refugees' origin attempting to provide visual justification of the exodus forced by the ongoing Civil War.

In an effort to reframe the political discussions on their movement and settlement across Europe, droneviews helped to display and document the reality of the refugees' lives. Visual practices that humanise rather than dehumanise – help to realign how refugees are seen. One such example is Rocco Rorandelli's 2015 drone photography project, *Trans-Europe Migration* which builds upon this documentary impulse and depicts the impact of conflict and the human condition, as well as the detritus and waste that is produced as a result of this mass movement across land. Opting to visualize the raw reality of the human migration from an aerial perspective, Rorandelli's chooses to frame his shots exclusively from an explicit, top-down, vertical gaze (figure 3). Capturing refugee movement between south-east and central Europe, Rocco Rorandelli's photo-series avoids the cliched tropes of human intervention and rescue, while documenting the support mechanisms upon which refugees rely upon. Defined as an 'aftermath photo' that plays down any sense of urgency (Batta et al, 2015), images of this ilk can, depending on the reading, both reduce and enhance refugee visibility.

**Insert Figure 3: Refugees receive provisions at the transit camp of Babska, on the border between Serbia and Croatia (2015). Image courtesy of photojournalist Rocco Rorandelli.**

"No longer the liminal figures that exist in a hinterland of invisibility" (Downey, 2009) refugees are, on the contrary, symbols of a "coming community" that is based upon exclusion. Drone photography, in its capacity to be immediate and all-seeing, feeds into these anxieties by framing such realities from often unseen perspectives. To produce photographs from directly above is to reduce the intimacy one might have with the space in the frame as well as the subject, but because of this unique perspective, so too can it invite further consideration and debate. For some it may read as a visual failure that neither produces nor denies visibility; it purports to give everything and in reality, shows us nothing. For others, it redefines how we are invited to examine a host of topics including, but not limited to the visibility of crisis, human rights, migration and the plight of refugees, further encouraging us to think about the double optic of recognition and invisibility (Bratchford, 2019) in a new era of documentary photography, technology and accessibility.<sup>8</sup>

Drones can also be perfect media to re-examine built infrastructure (Fish, 2016), as they change our volumetric perception of it and contribute to the understanding of protest events determined by it. Despite drones' strong military connotations, they have become a legitimate civil optical weapon for resisting the militarized and policed zones of protest events, as we will demonstrate in examples below. Grasping the

---

<sup>8</sup> For an engaging discussion of this photo and others on a similar theme, see 'The Visual Framing of the Migrant Crisis' Salon discussion on 'Reading the Picture' chaired by Philipp Batta, December 15 2015 - <https://www.readingthepictures.org/2015/12/great-exodus-look-migrant-crisis-pictured-media/> - accessed 17 December 2019.

materiality of the drone as an optical weapon is essential to understanding its impact on visualization, its agency in protest events and activist video production, and its role in empowering citizens. The example that follows demonstrates how droneviewing becomes the subject of contestation between different stakeholders in relation to who and what can be shown.

Drones can be perfect media for the visual analysis of built infrastructure (Fish, 2016), as they change our volumetric perception of it and contribute to the understanding of protest events determined by it. Despite drones' strong military connotations, they have become a legitimate civil optical weapon for resisting the militarized and policed zones of protest events, as we will demonstrate in examples below. Grasping the materiality of the drone as an optical weapon is essential to understanding its impact on visualization, its agency in protest events and activist video production, and its role in empowering citizens. The example that follows demonstrates how droneviewing becomes the subject of contestation between different stakeholders in relation to who and what can be shown.

### **Citizen Drone: anti-surveillant visibility in North Dakota and Hong Kong**

In 2016 drones were used by Sioux natives in Standing Rock, North Dakota, USA, to expose the dynamics of the protest aimed at stopping the construction of the Dakota Access Pipeline, near Standing Rock Sioux Reservation. The drones pictured the scale and rhythm of the construction: in particular the overnight work, the environmental setting, the police violence and “heavy-handed” pacification practices such as the use of water cannons, helicopters and dogs. Several drones were shot down by the police and private security firms working at the construction site. The drone pilots continued shooting footage until the FAA issued a restriction on the use of aircraft, except for those used in support of law enforcement or the media with special permits. The use of drones helped to raise issues above and beyond those of indigenous land rights and made visible the presence of non-Native law enforcement and the collaboration of law enforcement and the National Guard with private security firms working for the oil industry.

In his video *Drone Pilots exposing Oil Police Violence*, one of the Sioux drone pilots, *DrOne2bwild*, referred to flying drones over the police and producing drone videos as a new type of anti-colonial resistance, as it involved indigenous people using modern technology to resist the occupation of their native land.

*We are using this technology to fight this kind of battle. Long ago when they came over to seize, they came with superior technology that conquered all the indigenous people. Now it is the 21<sup>st</sup> century and we are utilizing the technology to the best of our abilities and skills as indigenous people, we are getting it round, we are using it back and we are gonna win (Navajo drone activist).*

The drones at Standing Rock were regarded as a new technology harnessed by the natives to resist further occupation and resource extraction, exposing dynamics of injustice and conflict. The drone footage of the camp and the movement also provided a sense of the scale of the resistance, contributing to the subjectification of the protesting crowd (See **Figure 4**). As one of the pilots claims in the video, the drones provided the protestors with a feeling of protection as they saw them hovering above. In a context of limited coverage of the event by the mass media – which did not cover it until the water cannons were

used against the protestors in freezing temperatures – the drones served as an essential visualization weapon, facilitating coverage of the protest, of the wider issues of the tribe members' and oil companies' contestation over land, as well as of interactions between the non-white population and the police. Although the protests did not reverse the US government's decisions about the pipeline's construction immediately, drone videos increased the event's visibility, making it a significant turning point in reshaping communication about an environmentally significant project on Native land<sup>9</sup>.

**Insert Figure 4 Here.**

Droneviewing of the Standing Rock activists camp. The view from above gives the empowering perspective of witnessing the event, revealing the scale of the protest, and becomes part of "watchful politics"<sup>10</sup> in delineating "us" (the indigenous people) versus "them" (the oil company police). Drone video narratives produced by indigenous drone pilots follow the anti-colonial plot. Screenshots from the Video: *Drone Pilots EXPOSING Oil Police Violence*<sup>11</sup>.

Mobile video practices and the de-professionalization of video activism have significantly transformed the dynamics of protest events and the protest environment. Policing of protests, a low-visibility activity, has become more transparent with the increasing number of videos produced by "citizen journalists" (Wilson and Serisier, 2010). With the use of drones for monitoring the police and private security personnel, visual activists can manage to avoid the common process of containment and ejection from spaces of protest or operate in ways that enable new visibilities and information to come to the fore. In doing so, activists can foreground the visual as a mode of address, a way of establishing a specific visibility for a group or cause related to a range of issues, including environmentalism or citizenship and land rights.

In addition, visual activists or counter-authority surveyors can produce a more accurate idea of a protest event's scale by estimating the different density levels of the crowd, opposing the official numbers provided by agents of the state (*Civil Drones*, 2016). While aiming at accuracy, droneviews are not only an alternative form of informational footage or collecting evidence but an instrument for generating a new, empowering form of visibility of the protesting community. This was the case with the #NoDAPL (No Dakota Access Pipeline) protest movement, in which protesters mobilised footage of their land and the infrastructure project to help produce the narrative of being estranged from their own ancestral territory through disconnection from sacred space and violence against "the terrestrial-aquatic space of purity of nature". Environmental violence is displayed as the view of the earth from above – and the story of the disturbance of elemental connections (Horton, 2017).

The ambiguities of the use of video in protest events, mentioned by earlier researchers (Wilson and Derisier, 2010), also apply to the new visibility afforded by drones. Drones provide spectacular images of the event and thus contribute to the subjectification of the crowd (Schmidt, 2015). But activist droneviewing also contributes to an already substantial amount of video content circulating in relation to protest events, which only need spectacular visual footage and a powerful oral narrative to give them additional political

---

<sup>9</sup> Eventually, the Dakota Access Pipeline (DAPL) had been ordered to shut down by August 5, 2020 so that an environmental impact assessment report could be undertaken. See <https://earth.org/dakota-access-pipeline-ordered-to-temporarily-shut-down/> Accessed 12 September, 2020

<sup>10</sup> On watchful politics and vigilant visibility, see Amore, 2007

<sup>11</sup> [https://www.youtube.com/watch?v=R5QW3H\\_0FIM&t=219s](https://www.youtube.com/watch?v=R5QW3H_0FIM&t=219s) Accessed 07.11.2019

force. Thus, it would be essential for social scientists to harness the drone-video affordances to advance the study of the continuous reconfiguration of video activism and the self-representation of the protesting crowd; mapping the tactics and visual narratives of the visual activists, as well as documenting individual practices of interacting with police, such as avoiding police containment and the loss of equipment.

While in the previous instances we have discussed counter-surveillant visibilities produced by the activists and protesters themselves, the following instance shows how a drone video produced by others and circulated via social media can stir up sympathy for the protesters.

In 2018 one million Hong Kong residents took to the streets to protest against the new Hong Kong extradition bill. The protest was aimed at the government of Hong Kong SAR, who were accused of collusion with mainland China. The Blacksheep collective produced a video, *Drone Over Hong Kong Protesters*<sup>12</sup>, that in several months gathered more than one million views and stimulated discussion regarding the future of surveillance and control. The drone provides a mechanism for resisting this control, due to its “countersurveillance capacities”, primarily by effectively augmenting the subject’s transparency and remaining a relatively invisible, “levitating” witness to the ongoing interactions – a feature of the CCTV camera, which we have learnt not to notice in everyday life. The agility of the drone, moving over the crowd while facilitating this view of the protest event, also reminds us of drones’ surveillance capacity to remain comfortably invisible to the surveilled.

This specific video uses a dynamic, aerial battlefield perspective of the protest event. The drone is manoeuvring between the high-rise buildings of Hong Kong’s city centre, rising up and diving down towards the crowd in the sheer excitement of flight characteristic of the Italian *aeropittura*. The drone narrative is only three minutes long but is nonetheless able both to pack in symbolic meanings of the protest and generate an immersive sensation. This sensation is particularly pronounced when the drone flies through the tear gas grenades and hovers high, whilst at the same time tracking crowd movements and capturing the confrontational dynamics between the police, protesters and on-the-ground photographers. Moreover, as drone videos increasingly do, this video helps transmit the atmosphere of the event and allows viewers to interiorize both the urban space and the air of the protest – its “atmocultural” dimension (Pavoni and Brighenti, 2017).

**Insert FIGURE 5 Here. Segments from the video *Drone Over Hong Kong Protest*.**

Online comments to the YouTube video suggest that the futuristic nature of the drone-assisted video makes for a new type of immersive non-TV, with properties akin to a video game. While the discussion continues about China acting as Big Brother by watching the activists, the drone video inverts this perspective, prompting a discussion on regulations on drone use as a way to block the activists’ “ban-opticon” (Bauman and Lyon, 2013). The video is appreciated not only for its cinematic stunts, “the dives”, but also for its value as a visual document of our time – indeed, as a “spatial testimony” (Keysar, 2018) that can bring incongruous and inscrutable spaces into dialogue (Fish et al., 2017). A drone flying over the heads of

---

<sup>12</sup> <https://www.youtube.com/watch?v=4YUK1ZokhmA> Accessed 05.03.2019

people in the crowd is justified by the audience as a minor instance of chaos during the protest, where multiple objects were flying over the protesters' heads. The drone video thus enhances the reality status of both the visual narrative and the events that comprise this narrative.

As is evident from the comments to the YouTube video below, the video's viewers emphasized the futuristic nature of its citizen narrative, which is spectacular even though it is produced by an individual and not a transnational news agency. At the same time, the drone pilot is lauded by viewers for their flying skills and the aesthetic qualities of the video, which transmit the excitement of the flight in a situation of impending violence.

[cprogrck 3 months ago](#)

That footage is amazingly powerful. Stunning. I love how they added the building dive in there though. It's like I'm not wasting that opportunity. Good Work!

[AZB1 3 months ago](#)

Holy cow... This makes it look like a video game.

[Seattleite FPV 3 months ago](#)

Holy.... you don't see this perspective on TV

[allen tey 3 months ago](#)

No nation want to mess with big brother.

[pixi fixi 3 months ago \(edited\)](#)

That's why governments around the world are scrambling to bring in regulations around drone ownership and usage, can't let the people see the truth can we now!

[Chino T-800 3 months ago](#)

No, they dont want to show you the truth, they just want to keep you brainwash, just look at the space programs pure bulls... sens day one people are waking up! S... got serious ☹

[Vitaly Varvinskiy 3 months ago](#)

awesome footage, really captures the chaos and tension of the situation through the lens of an amped up drone pilot!

[xjet 3 months ago](#)

Wait for the inevitable "flying over people is dangerous" from those who will undoubtedly ignore the fact that there were tear-gas canisters and rubber bullets flying around causing God-knows how many injuries. Great footage and a fantastic edit. Hat's off to TBS for this one.

*The comment thread to the video (in December, 2019)*

The instances discussed above provide different angles on the use of drones as a tool of mediatization, witnessing, participation and, ultimately, as part of an infrastructure of amateur anti-surveillance. In the cases of the US and Hong Kong, the drone was a medium for subverting both the dominant readings and the optical control of the event; here drones often provided the only visibility, due to a complete blockage of visual narratives or information on the contentious performance and protest in the mainstream media. In the case of the #NoDAPL protest, the drone subverted colonial technology-based domination and provided basic visibility of the protest, an event that can be said to have "generate[d] colonial wounds" (Clark and Hinzo, 2019), and a story of the indigenous peoples' "survance", in which this particular event has a sacred and cosmological purpose and cannot be reduced to a mere expression of environmental concern. As Tuck suggested, the federal aviation authority banning the use of drones by indigenous people emphasized the enduring epistemic and cosmological violence against Native Americans' rights of the land, where the state aptly divides the land into components of air, water and earth and claims control whilst also making chosen components its property (Tuck, 2018).

In the case of the Hong Kong protest, drones took the subversion of optical control to the level of an immersive and futuristic news narrative. With its cinematic special effects, the story the drones produced does not simply inform or provide a seamless logocentric flow with relevant images; it immerses the spectator within the scene. Several registers of witnessing are combined in the video: images at the level of normal eye witnessing (on the ground) are merged with witnessing from above, or “over the crowd” views, to enable the remote experience of a protest event as an “assemblage of the vertical” (Crampton, 2017). The use of the drone is thus not only a practice of witnessing the event and documenting potential injustices but is itself a contentious performance and a form of resistance – a symbolic and physical “staring back” at the dominant forms of optical control and the provision of in/visibility.

## **Conclusions**

In this article we have attempted to show that the practice and process of activism, specifically related to the use of volumetric space and drone-afforded visibility, is changing how and what we see or experience, aesthetically and experientially allowing for a new visual syntax to emerge. Using empirical examples of drone-afforded video activism in the Middle East, the USA and Hong Kong, we sketch out how droneviewing can intervene in the regimes of visibility that seek to shape and control our perception of politics and policing.

Visual activism is becoming more immersive, enabling the remote experience of protest events and spaces of contention. Moreover, it is increasingly shaped by the process of “vertical mediation” and vertically-mediated visibility. This is achieved not only via new aerial technologies such as drones, but by a more complex assemblage of drone-aided visual and surveillance capacities coupled with the power of circulating the visual via social networks, which constitute a new space of protest expression and contentious activism.

We suggest deepening the understanding of the specific communities of droneviewing practice – such as the activists using drones and the indigenous people raising the visibility of their grievances – which may be deemed too insignificant to be covered by the mass media. The issue of the protestors’ safety is key; drones can help to provide or to undermine this safety, as they not only watch and witness the misconduct of the powerful, but also record the scale and the kinesthetics of the protesting crowd. While their contribution to providing an impactful narrative and recontextualizing the event is not questioned, one of the issues that remains is the safety of the people on the ground as remotely operated devices may not only malfunction but can be jammed and disabled from the ground or by opposing UAVs .

A number of questions arise and can be explored in relation to the visual politics of drone-afforded visibility. Crucially: how do the drone video narratives create a counter visibility and aid alternative, indigenous storytelling? What kind of visibility does the drone generate in each specific event of contention? What are the ethical considerations for drone use by different communities of practice? What can we learn about the protest event from the drone specifically? How does the drone-video enhance the knowledge about the protest’s materiality and meanings? How can the boundaries of the seeable and watchable be established? These new practices of surveillance and counter-surveillance will engender new practices and geographies of invisibility, while the new regimes of visioning will engender new techniques of resisting the gaze.

Drone piloting is a multisensorial and emotional experience. For some communities of practice involved in droneviewing, the visual production is secondary to the experience of piloting the drone itself. We have argued that, for the protesters and activists, drones are a method not only for producing a video of the event, but also for challenging the power dynamics of surveillance by reversing the established visibility arrangements. From the activist's perspective, drones cannot be ignored as tools of empowerment for minority or vulnerable indigenous groups, whose interests may be severely restricted by access to mass media outlets, and whose grievances are consequently given low visibility or remain invisible. Drones help to create a new spectator perspective – that of a proactive and less vulnerable witness, at a safer distance than the activist on the ground.

### **Acknowledgements:**

The revision of this text was financed by the Fundação para a Ciência e a Tecnologia, Portugal through the Strategic Financing of the R&D Unit UID/SOC/03126/2019.

The authors would like to extend their gratitude to the photographers who generously donated their images for reproduction in this article. These include Rocco Rorandelli and Hagit Keysar. We also acknowledge the valuable and helpful comments of three anonymous referees.

### **References**

- Adey, P. (2010) *Aerial Life. Spaces, Mobilities, Affects*. Wiley-Blackwell: Oxford
- Abu Saif, A. (2012) *The drone eats with me: a Gaza diary*. Beacon press: Boston
- Amoore, L. (2007) Vigilant Visualities: The watchful Politics of the War on Terror. *Security Dialogue*. 38(2): 215-232
- Atlantic, The (2018) *China is Going to Outrageous Lengths to surveil its own Citizens*. <https://www.theatlantic.com/international/archive/2018/08/china-surveillance-technology-muslims/567443/>
- Bashir, S. and R. Crews (2012) *Under the Drone. Modern Lives in the Afghanistan-Pakistan Borderlands*. Harvard University Press: Cambridge
- Bauman, S. and D. Lyon (2013) *Liquid Surveillance*. Polity: London.
- Batta, P. *Reading the Pictures: The Visual Framing of the Migrant Crisis*. <https://www.readingthepictures.org/2015/12/great-exodus-look-migrant-crisis-pictured-media/> Accessed 15.12. 2015
- Baumgarten, B. Daphi, P. and P. Ullrich (2014) *Conceptualizing Culture in Social Movement Research*. Palgrave MacMillan: Basingstoke
- Benjamin, M. (2013) *Drone Warfare: Killing by Remote Control*. Verso: London
- Berger, J. (1972) *Ways of Seeing*. Penguin: London
- Birtchnell, T. and C. Gibson (2015) Less talk more drone: social research with UAVs. *Journal of Geography in Higher Education*. 39(1): 182-189
- Blaagaard, B. B. (2015) The Aesthetics of Posthuman Experience: The Presence of Journalistic, Citizen-generated and Drone Imagery. *Westminster Papers in Culture and Communication*, 10(1): 51–65
- Bousquet, A. (2018) *The Eye of War Military Perception from the Telescope to the Drone*. University of Minnesota Press: Minneapolis.
- Bratchford, G., 2019. 'Visualising the Invisible: A Guided Walk Around the Pendleton Housing Estate, Salford, UK'. *Visual Studies*. 33(4): 395-397
- Business Insider (2016) The drone report: Market forecasts, regulatory barriers, top vendors, and leading commercial applications. <http://www.businessinsider.de/uav-or-commercial-drone-market-forecast-2015-2?r=US&IR=T> [accessed 12 January 2018]



- Campbell, D. (2009), 'Constructed Visibility: Photographing the Catastrophe of Gaza', *The Aesthetics of Catastrophe*, Chicago, pp. 1–45 (Unpublished) [https://www.david-campbell.org/wp-content/documents/Constructed\\_Visibility.pdf](https://www.david-campbell.org/wp-content/documents/Constructed_Visibility.pdf). [accessed 3 September 2017]
- Chamayou, G. (2015) *The Theory of the Drone*. The New Press: New York
- Corcoran, M. (2014) Drone journalism: newsgathering applications of unmanned Aerial Vehicles (UAVs) in covering conflict, civil unrest and disaster. Introductory Paper. January. <https://cryptome.org/2014/03/drone-journalism.pdf>
- Clark, L.S. and A. Hinzo (2019) Digital Survivance" Mediatization and the sacred in the tribal digital activism of the NoDAPL Movement. *Journal of Religion, Media and Digital Culture* 8(76/104).
- Crampton, J. (2017) Assemblage of the vertical: commercial drones and algorithmic life. *Geographica Helvetica*, 71, 137-146.
- Culver, K.B. (2014) From Battlefield to Newsroom: Ethical Implications of Drone Technology in Journalism. *Journal of Mass Media Ethics*. 29: 52-64.
- Daphi, Priska; Lê, Anja; Ullrich, Peter (2013): Images of surveillance: the contested and embedded visual language of anti-surveillance protests. - In: Doerr, N.; Mattoni, A.; Teune, S. (eds.): *Advances in the visual analysis of social movements*. Emerald: Bingley.
- Dawes, S., 2014. The Digital Occupation of Gaza: An Interview with Helga Tawil-Souri. *Networked Knowledge* :1-18.
- Della Porta, D., A. Peterson and H. Reiter (2006). *The Policing of the Transnational Protest*, Ashgate: Aldershot.
- Downey, A. (2009) Thresholds of a Coming Community: Photography and Human Rights. *Aperture*. 194
- Doerr N., Mattoni, A. and Teune, S. (2013) *Advances in the Visual Analysis of Social Movements*, Research in Social Movements, Conflicts and Change, Vol. 35. Bingley: Emerald Group.
- Erincin, S. (2016) Digital media and Performance Activism: Technology, Biopolitics and New Tools of Transnational Resistance. *Liminalities: A Journal of Performance Studies*. 12(3) Online.
- Feldman, A (2005). 'On the Actuarial Gaze: From 9/11 to Abu Ghraib,' *Cultural Studies* 19 (2): 203-26.
- Fish, A. (2016) Seeing Revolutionary Info-structure. <https://savageminds.org/2016/03/23/seeing-revolutionary-info-structure/>
- Fish, A. (2019) Drones at the Edge of naturecultures. *MediaFields*. 14
- Fish, A. Garret B. and O. Case (2017) Drones Caught in the Net. *Imaginations* 8(2): 74-79
- Foster, H (1988) *Vision and Visuality*. Bay Press: New York
- Garrett, B. I. and A. McCosker (2017) Non-human sensing: new methodologies for the drone assemblage. In (eds. Cruz, G.E., Sumartojo S. and S. Pink Refiguring techniques in digital visual research). Palgrave: Cham
- Goldman Sachs (2016) Drones: Reporting for work <http://www.goldmansachs.com/our-thinking/technology-driving-innovation/drones/index.html> [accessed 14 January 2018]
- Gettinger, D. (2018) Summary of drone spending in the FY 2019 defence budget request. <https://dronecenter.bard.edu/drones-in-the-fy19-defense-budget/>
- Graham, S. (2016) *Vertical: The City from Satellites to Bunkers*. Verso: London
- Gregory, D. (2011) From a view to Kill. Drones and late Modern War. *Theory, Culture and Society*. 28(7-8): 188-215
- Gregory, D. (2014) Drone Geographies. *Radical Philosophy*. 183. January-February.
- Gregory, D. (2017) The territory of the Screen. *MediaTropes*. VI (2): 126–147.
- Hamilton, W.A., A. Kerne, Lupfer, N. (2018) LiveDissent: A media Platform for remote participation in activist demonstrations. ACM Group. 18, January 7/10.

- Hochburg, G. (2015) *Visual Occupations: Violence and Visibility in a Conflict Zone*. Duke: New York
- Jensen, O. (2016) Drone City - power, design and aerial mobility in the age of "smart cities". *Geographica Helvetica*. 71, 67-75
- Horton, J.L. (2017) Drones and Snakes. *Art in America*. October. 104-109
- Keysar, H. (2015) Artist Interview. <https://exposingtheinvisible.org/en/interviews/hagit-diy-mapping-and-reclaiming/>
- Keysar, H. (2018) A spatial testimony: The politics of do-it-yourself aerial photography in East Jerusalem. *Environment and PlanningD: Society and Space*. Online First.
- Klauser, F. and S. Pedrozo (2017a) Introduction: Power and space in the drone age. *Geographica Helvetica*. 72, 409-410
- Klauser, F. and S. Pedrozo (2017b) Big Data from the Sky: popular perceptions of private drones in Switzerland. *Geographica Helvetica*. 72, 231-239
- Lila, L. (2015). *Drone Warfare: Visual Primacy as a Weapon* · Lila Lee-Morrison 2015 *Trans Visuality: The cultural dimension of visuality Vol. 2: Visual Organizations*. Wiegand, F., Michelsen, A. & Kristensen, T. (eds.). Liverpool University Press, 2: 201-214.
- Mann, S. (2002) *Sousveillance: secrecy, not privacy, may be the true cause of terrorism*, <http://www.wearcam.org/sousveillance.htm> [accessed 11 September 2017]
- Mann, S., J. Nolan and B. Wellman. 2003. *Sousveillance: Inventing and Using Wearable Computing Devices*. *Surveillance & Society* 1(3): 331–355.
- McCosker, A. (2015) Drone vision, zones of protest, and the New camera Consciousness. *Media Fields Journal*. 9.
- McGarry, A. et al. (2020) *The Aesthetics of Global Protest*. Visual Culture and Communication. Amsterdam University press: Amsterdam.
- McLagan, M. (2006) Technologies of Witnessing: The Visual Culture of Human Rights. *American Anthropologist*, 108(1):191-220.
- Metz, C (1982) *The Imaginary Signifier: Psychoanalysis and the Cinema*. Indiana University Press: Bloomington.
- Miller, S. (2020) *Contemporary Photography and Theory: Concepts and Debates*. Bloomsbury Press: London
- Mirzoeff, N. (2011) *Right to Look: A Counterhistory of Visuality*. Duke University press: Bloomington
- Mitchell, WJT. (1995) *Picture Theory. Essays on Verbal and Visual Representation*. University of Chicago Press: Chicago
- Nath, A. (2016) Touched from Below: On Drones, Screens and Navigation, *Visual Anthropology*, 29(3):315-330
- Parks, L. (2017) Drone Matters: Vertical Mediation in the Horn of Africa in (eds. Parks, L. and C. Kaplan *Life in the Age of Drone Warfare*. Duke University Press
- Pavoni, A. and A.M. Brighenti (2017) Airspacing the city. Where Technophysics Meets Atmoculture. *Azimuth*. 10. 91-104
- Pauwels, L. (2015). *Reframing Visual Science. Towards a more visual sociology and anthropology*. Cambridge university Press. Cambridge
- Rae, J. D. (2014). *Analyzing the drone debates. Targeted Killing, Remote Warfare and Military technology*. Palgrave MacMillan: New York
- Ranciere, J. (2009) *The Emancipated Spectator*. Verso: London
- Schmidt, H. (2015) From a Bird's Eye perspective: Aerial Drone photography and Political Protest: A case study of the Bulgarian# resign Movement 2013. *Digital icons: Studies in Russian, Eurasian and Central European New Media*. 13: 1-27

- Shah, S. A. (2014) *International Law and Drone Strikes in Pakistan The legal and socio-political aspects*. Routledge: New York
- Shaw, I.G.R. (2016a) The Urbanization of drone warfare: policing surplus populations in the dronopolis, *Geographica Helvetica*. 71, 19-28
- Shaw I.G.R. (2016b) *Predator Empire Drone Warfare and Full Spectrum Dominance*. University of Minnesota press: Minneapolis
- Spiller, K. and X. L’Hoiry (2019) Editorial: Visibilities and New Models of Policing. *Surveillance and Society*. 17(3-4):267-271.
- Tagg, J. (1988) *The Burden of Representation: Essays on Photographies and Histories*. University of Minnesota Press: Minneapolis
- Tilly, C. (1986) *The Contentious French*. Harvard University Press: Cambridge, MA
- Tuck S. (2018) Drone vision and protest, *Photographies*, 11(2-3):169-175,
- Waghorn, N.J. (2016) Watching the watchmen: resisting drones and the “protester panopticon”. *Geographica Helvetica*. 71, 99-108
- Wilson, D. and T. Serisier (2010) Video Activism and the Ambiguities of Counter-Surveillance. *Surveillance & Society*. 8(2): 166-180
- Weizman, E. (2008) *Hollow Land: Israel's Architecture of Occupation*. Verso: London
- Zuev, D. (2010) A Visual Dimension of Protest: An Analysis of Interactions during the Russian March, *Visual Anthropology*, 23:3, 221-253,
- Zuev, D. (2013) The Russian March: Investigating the Symbolic Dimension of Political Performance in Modern Russia, *Europe-Asia Studies*, 65:1, 102-126
- Zuev, D, and Bratchford, G. (2020) *Visual Sociology: Practices and Politics in Contested Spaces*. Palgrave:Cham.

#### List of Videos:

1. Aerial: Drone footage shows total devastation in Homs, Syria.  
<https://www.youtube.com/watch?v=DoRdCbDd50o&t=15s> Accessed 12.01.2018
2. Civil Drones. Civil Dronok. <https://vimeo.com/165513022>. Accessed 15.01.2018
3. Drone Pilots EXPOSING Oil Police Violence.  
[https://www.youtube.com/watch?v=R5QW3H\\_0FiM&t=219s](https://www.youtube.com/watch?v=R5QW3H_0FiM&t=219s) Accessed 23.01.2018
4. POLICE SHOOT DRONE AT STANDING ROCK.  
<https://www.youtube.com/watch?v=2EHWdJICWg0> Accessed 23.01.2018
5. Drone Over Hong Kong Protests. <https://www.youtube.com/watch?v=PCyrJTmUpNQ>  
Accessed 12.12.2019