

A View From Above Vertical Perspective in the Age of Total Images

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Abstract Thanks to the technological dislocation of the eye of the beholder, the mechanical eye or both of them together, along recent decades the view from above has become a widespread, somehow trivial way to experience the world, imposing a new scopic regime. Deeply enmeshed and dependent upon technologies of surveillance, vertical perspective does not only democratize the point of view of the power: it provides us with an inhuman gaze on the world, liberating images from the constraints of naked human vision and erasing the distinction between images and maps, producing what Peraica has called total images. These topics are explored through a number of case studies from the visual arts.

Keywords Vertical perspective. Scopic regime. Surveillance technologies. Machine gaze. Drone photography

Summary 1 Introduction. – 2 Vertical Perspective as a New Scopic Regime. – 3 Between Photography and Mapping: Total Images. – 4 Conclusions.




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1 Introduction

Thanks to the technological dislocation of the eye of the beholder, the mechanical eye or both of them together, along recent decades the view from above has become a widespread, somehow trivial way to experience the world. From flying over the clouds to free fall experiences, from navigating Google Maps on our desktop to riding our GPS-equipped smart car, from playing video games in God's eye view mode to reserving a parcel on the metaverse, from satellite pictures to space telescope imagery to drone images, vertical perspective has, in the words of artist Hito Steyerl, replaced linear perspective with a "disembodied and remote-controlled gaze, outsourced to machines and other objects" (2011), and effectively imposed a new scopic regime.

Borrowed from philosopher Martin Jay (1988) and currently widely adopted in visual culture studies, the expression "scopic regime" effectively underlines how vertical perspective is deeply enmeshed in and dependent upon technologies of surveillance and power. Its implementation into our daily experience of the worlds we inhabit, however, does much more than simply democratizing the point of view of the power: it provides us with an inhuman gaze on the world, liberating images from the constraints of naked human vision and giving birth to what Ana Peraica has called "total images" (2019); and it erases the distinction between images and maps, between a granular, detailed, positioned, subjective view of the world and an abstract, apparently objective yet profoundly biased, representation of it.

By delving into the literature summarily referenced here, and focusing on a selected number of case studies from the visual arts, this essay explores how vertical perspective is affecting both the map and the territory, and how we can resist to it.

2 Vertical Perspective as a New Scopic Regime

Back on 5 February 2003, the U.S. Department of State Secretary Colin L. Powell gave his infamous remarks to the United Nations Security Council, in which he tried to present irrefutable evidence that Iraq was defying U.N. disarmament demands, relying on a multimedia presentation of communications intercepts, satellite photos and accounts from both spies and defectors. His 90 minutes presentation was aired on television, making his slides highly accessible and impactful on popular imagination. As it is widely accepted (Borger 2021), this speech didn't cause the war in Iraq, which was already decided by the U.S. administration; nor it succeeded in its goal of persuading the council to pass a second resolution backing military action against Iraq. In a few weeks, the claims that Powell described

as “facts and conclusions based on solid intelligence” started to fall apart, and that speech is currently referred as a proof of the U.S. unreliability within the United Nations.

Yet, twenty years later, it would be difficult to disagree with visual cultures scholar Nicholas Mirzoeff, when he describes this presentation as the “first political use of Microsoft’s PowerPoint software” (2016, 112) and an important step in what he calls “the war of images”. From the point of view of this essay, however, it’s even more important to recognize in this event one of the first cases in which satellite images are discussed in public, and in which photographs and maps merge into an indissoluble whole. Introducing the pictures supposedly indicating “that banned materials have recently been moved from a number of Iraqi weapons of mass destruction facilities” (Powell 2003), annotated with yellow captions by security experts, Powell states:

Let me say a word about satellite images before I show a couple. The photos that I am about to show you are sometimes hard for the average person to interpret, hard for me. The painstaking work of photo analysis takes experts with years and years of experience, poring for hours and hours over light tables. But as I show you these images, I will try to capture and explain what they mean, what they indicate, to our imagery specialists.

With this statement, Powell is not only reiterating the die-hard trope of the indexical value of photographs as proof of evidence; he’s also applying this value to inhuman artefacts shot by machines orbiting hundreds of miles from Earth, with no human eye pointing the scope, and no human hand pressing the button; and he’s, even more importantly, declaring that these visual artefacts are not accessible to the average eye – not even his own; they require interpretation, experience and labour to be turned into faithful information; they require outlines and notes. They are pictures, but they need to be looked at like maps, rather than photographs.

A few years later, the same war and a similar, black and white, blurred imagery resurface in a rather different media artefact. It’s April 2010, and Wikileaks has just released, on a dedicated website, a 39 minutes video called *Collateral Murder*.¹ The video combines footage shot, on 12 July 2007, from an American AH-64 Apache helicopter flying over Baghdad, in which the crew fires, along three different

1 The video was one of the documents, including videos and diplomatic cables, that in 2010 American Army intelligence analyst Chelsea Manning leaked to Wikileaks. For the leak, Manning was convicted, processed and sentenced to 35 years’ imprisonment, to be released in May 2017 after President Obama commuted her penalty.

strikes, on a group of people and kills several of them, including two Reuters journalists, civilians and even kids. The soldiers comment upon the action, laughing at and insulting some of the casualties, and saying things like “Oh yeah, look at those dead bastards” or “Well, it’s their fault for bringing their kids into a battle”.²

Today, *Collateral Murder* is widely regarded as an impressive visual reference of an increasingly remote-controlled war, in which orders are transmitted by radio from very far away, and soldiers themselves project on their victims a highly mediated gaze from above, with little or no ability to distinguish between reality and the simulations they play for training purposes. Although not shot from a drone, the video bears strong resemblance with drone’s imagery: neither the information overlapped to the image, nor the ambiguity of the pointer which, in Mirzoeff’s effective words, made the shooters misrecognize their “camera as a weapon” (2016, 122)³ help the soldiers to feel closer to the ground and to their victims than the average drone pilot, sitting in their office somewhere in the U.S.

2.1 The View from Above

Far from new, the view from above has a long history in Western culture. Mirzoeff traces its roots in the need, for the general at war, to visualize the battlefield as a whole - a task that can be better performed from a higher position, ideally from the air. From there, or when not possible, from the top of a hill, the eighteenth and nineteenth century general could map the battlefield, see the war in its broader dynamics, rather than in its granular reality.

This origin sets a number of relations that have haunted, and will probably haunt forever, the history of this specific point of view on reality. The first relation links the view from above with the point of view of power, control and surveillance. This is obviously visible in the following developments of aerial photography, up to satellite photography and drone imagery; but it can be traced as well in the widely researched model and metaphor of the Panopticon, conceived in 1791 by British philosopher Jeremy Bentham as the design of a prison where all prisoners can be observed by a single corrections officer, aptly positioned at the top of a tower in the centre of the building; and in the techniques of forensic photography developed in the

² The video is still available for download at https://wikileaks.org/wiki/Collateral_Murder,_5_Apr_2010.

³ If we follow Virilio (1989, 4), this is not “misrecognition” but full recognition: “From the original watch-tower through the anchored balloon to the reconnaissance aircraft and remote-sensing satellites, one and the same function has been indefinitely repeated, the eye’s function being the function of a weapon”.

late nineteenth century by French criminologist and photographer Alphonse Bertillon as scientific protocols to produce documentation of murders, mounting the camera on a high tripod and photographing the crime scene from above before it was disturbed by investigators, or using measuring grids to document the dimensions of a particular space and the objects in it (metric photography).⁴

The second relation is with the inhuman and the technical: being the human gaze naturally grounded, tied to the soil, only by freeing themselves from the limitations imposed by gravity, or by means of some technical prosthesis of their own eyes, can humans gain a view from above. In other words, differently from human vision, the view from above is always mediated – either facilitated by a device that allows us to bring ourselves up in the skies, from Icarus’ wax wings⁵ to hot air balloons, from aeroplanes to spaceships, or enabled by prosthetic technologies of vision, from spyglasses to cameras. Therefore, its evolution is inextricably linked to the history of aviation, as well as to the history of photography.

Finally, the third relation links the view from above to the history of mapping, which has always been based on imagining, simulating or physically adopting a point of view on a territory that allows to capture it in detail, and to represent it proportionally on a flat surface. Unsurprisingly, the first massive adoption of aerial photograph along the World War I was used not just to visualize the battlefields and decide the spot of bombing, but also to map new territories with increasing precision and astonishing detail.⁶

Along the following decades, the evolution of technologies of flight and image capture drove the adoption of the view from above in warfare, mapping, scientific research and in the arts. Tracking the evolution of such technologies – from aircrafts to satellites, from the GPS system to unmanned aerial vehicles, from the spacecrafts that allowed us, along the Seventies, to see and photograph the Earth from outer space to space telescopes such as Hubble, launched in 1990, and Webb, launched in 2021, which with its infrared cameras allows us to look into the depths of the universe both in space and time – would go far beyond the scope of this essay. Along this journey, the aerial became, as Mark Dorrian and Frédéric Pousin wrote, “central to the modern imagination and, indeed, might even be claimed to be its emblematic visual form” (2013, 1). It conquered artistic imagination, shaping ways of seeing and approaches to image creation far

4 Alphonse Bertillon (1853-1914) published a book called *La Photographie Judiciaire* (1890), invented the mugshot and pioneered biometrics as a tool to identify criminals.

5 Christine Buci-Glucksmann refers to the aerial view as an “Icarian Gaze” in her 1999 essay “Icarus Today: The Ephemeral Eye”.

6 See the U.S. Army doctrine “Map as you move”, referenced in Mirzoeff 2016, 105.

beyond the plain adoption of aerial photography as an artistic medium, in Nadar's pioneering experiments with balloon photography to the shots made in the Seventies from a Piper aircraft by Italian photographer Mario Giacomelli. It has been found in the Suprematist approach to abstraction, in László Moholy-Nagy's photographic work and theoretical statements,⁷ in Marcel Duchamp's and Man Ray's *Elevation de poussière*, shot in 1920 and first published in the Dadaist magazine *Littérature* with the caption "Vue prise en aéroplane". It has been tracked, furthermore, in Futurist *Aeropittura*, in Jackson Pollock's approach to horizontal painting, in Lucio Fontana's Spatialist manifestoes and artworks, as well in the aerial point of view implied by most Land Art works, to name just a few examples.⁸

And yet, although most of this technological apparatus was already in place by the late Nineties, it was only with the beginning of the twenty-first century, and more precisely in the late Oughts, that the aerial view became "virtually ubiquitous", and started pervading "popular and consumer culture" (Dorrian, Pousin 2013, 9), saturating "global media as well as social networking practices" (Kaplan 2018, 6) and becoming "so much a part of our everyday life as image consumers" (8). As Caren Kaplan acutely noticed, it's quite revealing that, although there were a number of eyes in the sky capturing images of the Twin Towers on 11 September 2001 – from the National Oceanic and Atmospheric Administration (NOAA) geostationary satellites to the International Space Station to the North American Aerospace Defence Command (NORAD) – only a small fraction of these generated images was made available to the public and captured people's imagination. Still at that time, aerial imagery was still controlled and filtered by those in power, and as such it was mostly classified; furthermore, it was perceived as something with a utilitarian function in military practice, yet difficult to interpret and unable to provide an emotional storytelling of a given event, capable to communicate on a human level.⁹ As we already wrote, the human gaze

7 As he wrote in *The New Vision*: "Aviation has a special part to play in this respect. New views appear below an airplane, and also from looking upward at an airplane. The essential is the bird's-eye view, which is a more complete space experience. It alters the previous conception of architectural relations" (Moholy-Nagy 1949, 63).

8 Most of these references are borrowed from the edited collection *Seeing From Above. The Aerial View in Visual Culture* (2013). Already in 1999, Buci-Glucksmann wrote about "the point of view of the aviator, common to Malevitch and Duchamp" (1999, 54), stressing how the aerial view affected the advent of abstract art. *Aeropittura* is discussed in Steyerl 2011.

9 "Until the coincidence of the ramp-up of visual technologies that became associated with the war on terror after 9/11 and the advent of social networking with its intensely rapid circulation of digital imagery [...] the 'God's-eye view' of violent scenes was either classified as 'secret' by the military or released on an extremely selective basis" (Kaplan 2018, 5).

is naturally grounded – or, to adopt Beaumont Newhall’s terminology, “earthbound” (1969, 11). In order to easily adopt a novel point of view on reality, and to identify with it, we need to experience it, either directly or in mediated form; and until the early twenty-first century, this experience was still rare, and controlled, for the average image consumer.

The two media events we mentioned earlier, respectively from 2003 and 2010, confirm what we are saying now. From his power position, Powell shared satellite images to non-expert eyes to persuade his audiences to adopt his own point of view, and believe in it. *Collateral Murder* was classified material that got leaked. The technical, cold, inhuman gaze of both became shareable only thanks to a high level of mediation and interpretation, performed by Powell and Wikileaks, respectively, and for political and rhetorical purposes. And yet, they were dropped into a media environment that was increasingly capable to receive and see them. Thanks to cheap flights, taking a plane became a commonplace way of travelling already in the Nineties; everybody could see the upper side of the clouds, but only the simultaneous advent of smartphones and social media allowed everybody to shoot and circulate pictures of clouds, cities and mountains from above. While consumer technologies – from smartphones to head-mounted cameras – made the experience of flying (or even free falling) shareable, the release of Google Earth in 2005 made satellite vision accessible to anybody. Similarly, the increasing availability of webcams and surveillance cameras in the consumer market, driven by the smart home industry, popularized the Big Brother’s view as much as, a few years later, the commercialization of drone technology outside of the military world – either as a game or as a powerful tool for photographers and video makers – made the drone’s eye view something that everybody can easily recognize, both on television and social media. And finally, video games played a decisive role in educating younger generations to the view from above: from flight simulators to the God’s eye view introduced by global phenomena such as *Sim City*; from the frequent habit of including a game’s map in the game interface, allowing the player to see where he’s on the map when running around in first or third person’s view; to the “long zoom” described by Steven Johnson (2006) as “our own defining view”, allowing anyone to move seamlessly and instantly between different temporal and spatial scales, from ground level to outer space, and from the micro to the macro dimension.

If we consider all this, it comes as no surprise that – with a few notable exceptions – much of the theoretical, historical and critical work concerning the aerial view has been produced along the last two decades. One notable and original example is the short essay “In Free Fall” (2011), by artist and writer Hito Steyerl. Steyerl takes off not from flying, but from the experience of free falling – with the

consequential loss of a stable horizon - to claim how traditional, linear perspective, born out of the need to establish a paradigm of orientation, happened to be replaced, as a consequence of the technological evolution following the invention of aviation, by a new paradigm, that she calls vertical perspective. Yet, Steyerl goes even further, claiming that if linear perspective worked as a complete reinvention of the subject (placed at the centre of vision, but also subjected to “supposedly objective laws of representation”), of space (which became “calculable, navigable and predictable”) and time (which became linear, and allowed linear progress); we have to expect the same reinvention from vertical perspective.

Just as linear perspective established an imaginary stable observer and horizon, so does the perspective from above establish an imaginary floating observer and an imaginary stable ground.

This establishes a new visual normality - a new subjectivity safely folded into surveillance technology and screen-based distraction. [...] Additionally, the displacement of perspective creates a disembodied and remote-controlled gaze, outsourced to machines and other objects. [...] New technologies have enabled the detached observant gaze to become ever more inclusive and all-knowing to the point of becoming massively intrusive - as militaristic as it is pornographic, as intense as extensive, both micro- and macroscopic. (Steyerl 2011)

This new visual paradigm, mirroring the process of verticalization of power that Eyal Weizman has called “the politics of verticality” (2002), might be “inclusive and all-knowing”, shaped by surveillance and policing, capable to turn the eye’s function into “the function of a weapon” (Virilio 1989, 4), but it’s far from objective. Borrowing from artist Trevor Paglen (2013), we could say that “the view from above is less an expansive panorama than a view through a keyhole”. However filled with visual and non visual information, satellite views are often opaque and require, as we already noticed, interpretation in order to be understood. They are often the result of an algorithmically controlled process of patching that occasionally generates glitches, and that merges images taken in different times, from different machines; they mirror, as in the case of Google Earth, politics of resolution and commercial interests (Dorrian 2013, 301-2). Similarly, the drone sight offer a relatively narrow range and low image quality, and it’s often controlled by an extended network of operators that affect the way it works and sees (Kaplan 2018, 211). They both abstract the landscape and minimize the human. They show “the world as the angels may see it from the midst of space”, not “as men see it who dwell in it, and cultivate it, and love it”, to quote what a British art critic from the 1880s had to say against balloon views (Newhall 1969, 12).

2.2 Scopic Regimes

And yet, notwithstanding its limits and biases, this new visual paradigm affects not only the way we see the world, but also the ways we design and inhabit it (Dümpelmann 2014, 1). It is the result of “a cataclysmic shift in our ability to navigate, inhabit, and define the spatial realm”; it is embedded in “infrastructures and systems, and we are located, however insecurely, within them [...] we do not stand at a distance from these technologies, but are addressed by and embedded within them”. (Kurgan 2013, 14)

All this, together with Steyerl’s claim that vertical perspective replaced visual perspective, suggests that it would be productive to replace the concept of visual paradigm with the stronger concept of scopic regime.¹⁰ The term was popularized by Martin Jay in his contribution to Hal Foster anthology’s *Vision and Visuality* (1988), a foundational publication for the then emerging field of visual culture studies. Jay himself borrowed it from French cinematologist Christian Metz (1982), who coins the term to describe how the cinematic apparatus constructs the viewing experience by creating a scopic arrangement in which the spectator has a designed position. As it’s been noticed (Sendyka 2013, 104) the term “suggests absolute subordination”, “a kind of oppression, violence or enforced formatting of the viewer”. It describes the act of vision as a construction, positioning the viewer within a technical apparatus that is itself shaped and conditioned by dominant ideologies. Visual regimes don’t suggest, or simply make available, but

prescribe modes of seeing and object visibility and [...] proscribe or render untenable other modes and objects of perception. A scopic regime is an ensemble of practices and discourses that establish truth claims, typicality, and credibility of visual acts and objects and politically correct modes of seeing. (Feldman 1997, 30)

In his foundational essay, Jay identifies what he considers the three visual regimes of modernity: linear perspective, otherwise named Cartesian Perspectivalism; the Dutch art of describing, or Baconian empiricism; and the Baroque “madness of vision”, following Buci-Glucksmann (1986). He concludes designing the Baroque vision the dominant regime of our time, although coexisting with surviving elements of the two others; but also suggesting that other regimes, now hard to envision, “are doubtless to come” (20).

In Jay’s analysis, Cartesian perspectivalism generates a space that

¹⁰ The concept of scopic regime has been previously adopted to discuss the view from above, and more specifically the drone’s eye view, by Gregory 2011.

is “geometrically isotropic, rectilinear, abstract, and uniform” (Jay 1988, 6), observed by a monocular, “static, unblinking, and fixated” eye, producing “a visual take that was eternalized, reduced to one ‘point of view,’ and disembodied” (7). Dutch art of describing emphasizes “the prior existence of a world of objects depicted on the flat canvas” (12), focusing on the objects’ surface rather than their position in space; it’s descriptive instead of narrative, and treats the surface of the canvas as a map, following the model of the Ptolemaic grid rather than that of the perspectival grid (15). Finally, the baroque is “painterly, recessional, soft-focused, multiple, and open” (16), and pursues an impossible, erotic relationship with reality. Adopting Norman Bryson’s terms (1981), it follows the logic of the Glance (the embodied view, emotionally and erotically entangled with reality) rather than the Gaze (the disembodied, externalized point of view). As such, it is the true opponent of the two other visual regimes, “a permanent, if often repressed, visual possibility throughout the entire modern era” (16) rather than a historically confined one.

Vertical perspective does not easily identify with any of the scopic regimes described by Jay, although it shares features with all of them. It’s definitely a Gaze, rather than a Glance, but the way in which its “floating observer” relates to its “imaginary ground”, embodying the long zoom and roaming between different scales, turning objects into abstract and distant shapes or suddenly and abruptly penetrating into their reality, bears some resemblance with Baroque’s crazy vision. It pretends a God’s eye view on reality, seeing everything and positioning any thing in the right spot on the grid, but it as well treats reality as a surface to be mapped, shifting between the perspectival and the Ptolemaic grid. As a new visual regime, it could aptly be described as the bastard child of the three visual regimes of modernity, the outcome of Western culture ways of seeing as they have been embedded and translated in our current technological apparatus.

3 Between Photography and Mapping: Total Images

I was always fascinated that while eyes can reach astronomical distances, till the black holes sometimes, but voice cannot exceed a few hundred meters, and hands less than a meter. I told him, “M., in order for you to be accepted as a refugee, you would need to give vision to your hand, a voice that can reach as far as the eye”.

In the video work *View from Above* (2017) [fig. 1], the calm, soft voice of Hiwa K. tells the story of M., who - like the artist - came to the Schengen area from Kurdistan, in the north of Iraq, applying for the status of refugee. Along the Nineties, the U.N. considered Kurdistan a “safe



Figure 1 Hiwa K., *Destruction in Common*. 2020. Woven carpet, 6 × 6 m. © Daniella Baptista. Exhibition view Jameel Arts Centre 2020. Courtesy Kow, Berlin

zone”, which of course was a reality only in the minds of the U.N. bureaucrats. Yet, one has to come from an unsafe zone, or at least to be able to prove that one does, in order to qualify as a refugee. M. applied for asylum in the country X; he waited years for a positive answer, but unfortunately he got one negative answer after another, until he received the final rejection from X and was set to be deported back to his country. After a while he managed to cross the border without legal papers and enter another country, to apply for refugee status again. There he met the narrator, who helped him learn everything about a city from the unsafe zone by looking at a map, and memorizing details about every street, every building. When M. finally got his refugee interview, the official asked him questions about the geography of the town, and compared his answers to a map. It took only twenty minutes for the official to grant M. refugee status; other people that were actually from that city waited for years, as their accounts were flawed and inaccurate.

In the video, neither M. nor the narrator appear. The story is told as a voiceover, as the camera slowly pans over the model of a deserted city in a bird’s eye view, zooming in occasionally on a few details. M. is successful because he internalized the view from above: he shares



Figure 2 Hiwa K., *View from Above*. 2017. Single channel HD video, 16:9. Colour, sound (with English language), 12:27', 5+2AP. Courtesy Kow, Berlin

the same view and the same knowledge of the officer, who probably never went in the unsafe zone, and only knows it from maps, reports, and documentation. Additionally, he is able to translate his view into words, information and data: two abilities that the people actually coming from there rarely share, knowing their city only from the ground. Their gaze falls short, and so their voice and hands.

View from Above is sometimes shown together with *Destruction in Common* (2020) [fig. 2], a 20-by-20-foot handwoven carpet showing an aerial view of Baghdad. The Iraqi capital has been subjected to massive bombings from the air on several occasions, both during the first and second Gulf Wars; these attacks have been widely documented and broadcast in the media. Many people from around the world, who have never visited it, see Baghdad in this way: as a target. We share the point of view of the missile that falls, of the bomb that kills. The work reproduces the point of view of the western power involved in an asymmetrical war. Yet, by strolling around the carpet or sitting on it, we are somehow invited to become more acquainted with the city, to ‘inhabit’ it and to learn it as M. did with his imaginary town from the unsafe zone.

Both the city that M. builds in his mind, and the aerial view of Baghdad are more than maps. They blend together the vertical perspective of maps, the representative fidelity of photography, and layers of information. They are, in the words of Croatian photography theorist Ana Peraica (2019), total images.¹¹

¹¹ Peraica borrows the expression from Ingrid Hoelzl and Rémi Marie (2015, 24), but she expands it beyond its original narrow limits.

I use the term total image to mean any and all images which are liberated from the constraints of naked human vision and, particularly, the angle of view (AoV) or 'view-angle', sometimes called the field of view (FoV), which is the extent of a given scene which can be imaged. A total image, therefore, is the result of a long process of research and development in image technologies in order to extend human vision to the point of being able to see the whole of our world all at once. (13)

Total images are unmanned, "in-human by its politics" (Peraica 2019, 14) and nonhuman (Zylinska 2017) for the point of view they adopt and their often constructed and computed nature. They comprise various categories, from pseudo-photographs to orthophotographs to photomaps, depending on the way they are constructed and their relationship with maps. Although inheriting the indexical function of photography, they are "more fiction than document" (64). If "the landscape describes place, and the map describes space" (66), total images blur the difference between the two, and between vision and visualization, topography and cartography. They are often asynchronous, layered in time as well as space. They include layers of visual and other-than-visual information: geo-positioning information, tags, commercial information, traffic data, crowdsourced rating. In them, "the photograph is but one layer of many", "merely a visual style for the image", "a coded function" (88). They introduce a "polyperspectivalism", denying "the absolute point of view" and introducing "many simultaneous views", all of them dynamic: "One single reality may be experienced in a multitude of ways, which in turn produces multiple realities, each providing a coherent picture" (111). Finally, they do not just represent, but they affect and change physical reality as well: if we don't want to mention the drone and its "targeted killing", we can think to satellite calibration targets, buildings and installations conceived to aid in the use and development of satellite and aerial reconnaissance; to the Palm Jumeirah islands and the World archipelago in Dubai, tourist destinations designed to be admired from above; or to the way crowdsourced rating featured on online maps can affect tourism in specific places.

Total images have been investigated, researched, exploited and portrayed in a growing number of artistic projects. The widespread adoption and easy access to Google Earth in its various articulations, in particular, paved the way to a number of post-photographic projects, based on the exploration of this second order reality, shot, computed and assembled by machines with little intervention by humans. Four works from the early Tens can briefly summarize the spectrum of possibilities opened up by the platform. In 2010, Canadian artist Clement Valla started documenting "strange moments where the illusion of a seamless representation of the Earth's surface seems



Figure 3 Clement Valla, *Postcards from Google Earth*. 2010-ongoing. Image courtesy of the Artist

to break down”: rather than glitches, these images are – in Valla’s view – the “absolute logical result” of the way Google Earth is made and of what it actually is – a “database disguised as a photographic representation” (Valla 2012). While *Postcards from Google Earth*¹² focuses on the distortions produced by the effort to adapt photographic imagery to the map of the world [fig. 3] – the “perspectival losses” of this ambitious machinery – and tries to save the peculiar features of this alternate reality from their slow but inevitable disappearance, in *Dutch Landscapes* (2011) Dutch artist Mishka Henner documents the visual consequences of the clash between the politics of total transparency and visibility at the core of Google Earth and the politics of opacity of local governments and regulations [fig. 4].¹³ Cloning, blurring, pixelization, and whitening out sites of interest are some of the methods adopted to censor sites deemed vital to national security, and can vary from country to country. Surprisingly, the

12 The project can be found at <http://www.postcards-from-google-earth.com/>.

13 The project is available online at <https://mishkahenner.com/Dutch-Landscapes>.

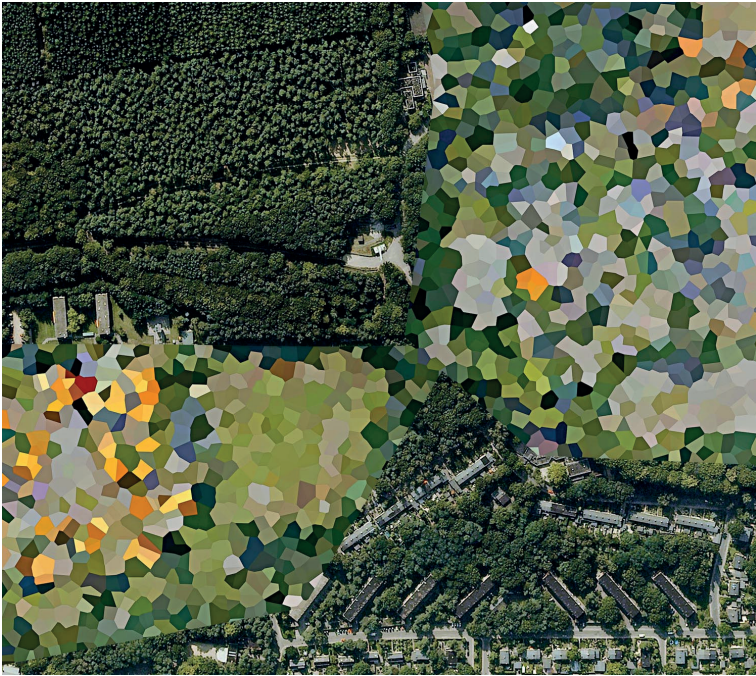


Figure 4 Mishka Henner, *Prins Maurits Army Barracks, Ede, Gelderland*. 2011. Archival pigment print. 80 × 90cm / 150 × 168cm. From the series *Dutch Landscapes*, 2011. Image courtesy of the Artist

Netherlands - the country of the Dutch art of describing, but also a place that would not exist as it is without a massive human intervention that completely transformed the natural landscape - decided to impose bold, multi-coloured polygons over these sites, turning the view from above on the Dutch landscape into a colourful, occasionally abstract patchwork.

Again in 2010, Italian artist Marco Cadioli modified Google Earth by removing the “photographic skin” from its surface [fig. 5]. The resulting video¹⁴ presents a bird’s eye view moving slowly over an abstract white surface inhabited only by data, pins, icons, colored lines, textual information, as if the total image of the Earth was peeled off from everything that made it a faithful reproduction of the territory, revealing its hidden layers of information, its alien, artificial depths. Finally, with *Dronestagram* (2012) British artist James Bridle effectively exploited the “eye in the sky” against itself, by using Google

14 Marco Cadioli, *Over Data*, 2010. Video, 3’13”. See <https://marcocadioli.com/over-data/>.

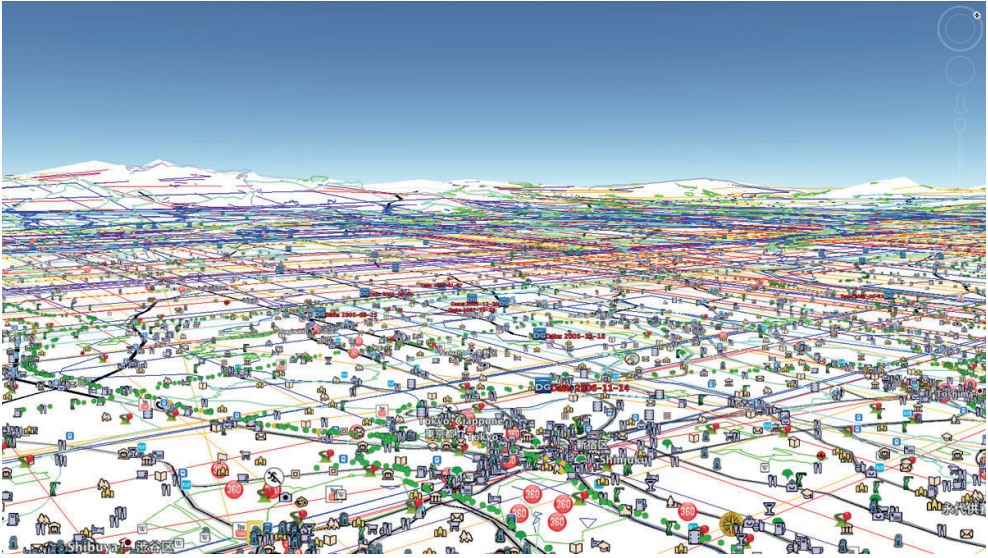


Figure 5 Marco Cadioli, *Over Data*. 2010. Video 3'13", shot in Google Earth 2010, HD 1280 × 720 (H264). Still. Courtesy of the Artist

Maps Satellite View to visually identify and circulate on social media platforms places in Afghanistan and Yemen that have been the location of drone strikes as they occurred [fig. 6].¹⁵ Bridle fights against the politics of invisibility of drone attacks, which find little coverage on mainstream media not only because the information is classified - most of the records of strikes were drawn from the Bureau of Investigative Journalism, an independent media channel - but also because these places can be neither seen nor visited - except by military drones. According to Bridle,

The political and practical possibilities of drone strikes are the consequence of invisible, distancing technologies, and a technologically-disengaged media and society. Foreign wars and foreign bodies have always counted for less, but the technology that was supposed to bring us closer together is used to obscure and obfuscate. (2012)

The drone's eye view itself has been used by artists for alternative, and often critical, purposes. In 2012, Paris based artist and photographer Tomas van Houtryve heard about a drone strike in

¹⁵ The project is documented at <https://jamesbridle.com/works/dronestagram>.



Figure 6 James Bridle, *Dronestagram*. 2012. Screenshot of the Instagram feed

northeast Pakistan which killed a 67-year-old woman picking okra outside her house. Following this event, he attached his camera to a small drone and travelled across America to photograph informal gatherings – weddings, funerals, groups of people praying or exercising – the kind of events often targeted by American drone strikes in foreign countries. *Blue Skies Days* (2013-15) borrows its title from a sentence uttered by the grandson of the old lady: “I no longer love blue skies... The drones do not fly when the skies are gray”.¹⁶ By moving the drone’s eye view to the U.S. territory, van Houtruyve tries to empathize with a fear that, not unlikely the wars that cause it, is totally asymmetrical [fig. 7].

Paraphrasing Eyal Weizman, we could say that artists like Bridle and van Houtruyve are making an active effort to “reverse the forensic gaze” (Weizman 2017, 9), using the same apparatus that produces

¹⁶ The project is documented at <https://tomasvh.com/works/blue-sky-days>.



Figure 7 Tomas van Houtryve, *Suspect Behavior*. 2016. Digital print, 24 × 24. From the series *Blue Sky Days: A Drone's Eye View*. Courtesy the Artist

and controls total images in order to investigate, question and deconstruct it. Back in 2010, Weizman co-founded Forensic Architecture (FA), a research agency based at Goldsmiths, University of London, investigating human rights violations including violence committed by states, police forces, militaries, and corporations. This ever-evolving research body employs cutting-edge techniques in spatial and architectural analysis, open source investigation, digital modelling, immersive technologies as well as documentary research, situated interviews, and academic collaboration to produce an extremely consistent body of work which is presented in a variety of venues, from exhibitions to international courtrooms, from parliamentary inquiries to United Nations assemblies, from citizen's tribunals to their on-line platform¹⁷ and social media accounts.

¹⁷ Available at <https://forensic-architecture.org/>.



Figure 6 The two strikes hit former cemeteries. Map created using a cemetery land allotment map (late 19th century) and an aerial photograph, 1944. Courtesy Forensic Architecture and Centre for Spatial Technologies, 2022

FA's investigations provide a striking example of how the total image can be used for counter-information and alternative research. For example, in June 2022 FA published *Russian Strike on the Kyiv TV Tower*, a video investigating a series of strikes that happened in March 2022, as part of the Russian invasion of Ukraine. The strikes were directed against the Kyiv TV tower, a 385 meters high structure erected in 1973 in the Babyn Yar, the site of one of the worst massacres of the Holocaust, later concealed under strata of terrain that modified the topography of the site. The tower was reportedly used by a wide range of civilian TV and radio stations - and thus, did not represent a legitimate military target in itself. Accompanied by a number of other Russian attacks on TV towers throughout Ukraine, the event reveals the Russian attempt to disrupt the spread of information and demoralize the population. The tower survived the attacks, but a nearby building was hit, sustaining significant structural damage. Part of a sports complex, the building had been due for renovation to host the new Museum of Holocaust in Ukraine and Eastern

Europe. The report not only uses videos from different sources (user-generated content, CCTV camera feeds, mainstream media) and methods such as synchronization, 3D modelling and geolocation to reconstruct the event; but, thanks to a collaboration with The Center for Spatial Technologies, it digs deep into the history of the site, described by FA as “a tangled nervous system of historical references and repressed memories” (Forensic Architecture 2022). Commissioned by the Babyn Yar Holocaust Memorial Center, between 2020 and 2022 The Center developed a landscape model to digitally reconstruct the original topography of the Babyn Yar, by combining topographic maps from the early twentieth century, aerial images, and archival photographs. By using this landscape model as a tool, the investigation digs into the history of the site:

not only one of violence but of different practices of cover-up and negation. The latter term refers here not only to the topographical practice of burying crimes beneath layers of earth, but also to the act of controlling the dominant message by interrupting the circulation and interpretation of news and personal narratives, isolating individuals and restricting unwanted solidarity. (Forensic Architecture 2022)

More recently, FA started an ongoing investigation about Israeli military attacks on medical infrastructures in Gaza, that have been taking place repetitively since October 2023. The research, suggesting “that hospitals in Gaza are being subjected to a systematic pattern of intimidation and violence by the Israeli military as part of the ongoing invasion” (Forensic Architecture 2023), replaces the relatively stable and closed medium of the video report with three web platforms - one for each investigated target - that are continuously updated as events develop. By scrolling the websites vertically, the user roams geographically in bird’s eye view over a 3D model of the hospitals, and temporally along a timeline of the attacks, occasionally illustrated by pictures and videos from mainstream and social media. Perfectly mapped over the 3D models, this media debris - often low-res and poorly made, yet picturing the events in their tragic, crude reality - adds evidentiary realism to the cold objectivity of the 3D model, while the vertical scrolling - reminiscent of the infinite scroll of social media - makes the platform experience a painful journey through information, whose end is hard to glimpse.

4 Conclusions

Resistance in an age of mass surveillance requires the ability to see as surveillance states do. It requires understanding different methods of surveillance, from the intimately physical to the abstract and electronic. It requires that we consider all possibilities even if they seem remote. (Appelbaum 2016, 157)

The scopic regimes of modernity emerged as collective ways of seeing that mirrored the worldview of the societies that produced them, and more specifically the point of view of the ruling classes: Cartesian perspectivalism placed the human subject at the centre of the visible world; the Dutch art of describing responded to the needs of a burgeoning capitalist economy that turned the world of objects into a catalogue of commodities, and perspectival depth into a surface to be mapped; and the Baroque was the art of the Counter-Reformation church, an expression of its urge to beguile and embrace the worshippers. Artists, architects and craftsmen, who worked in the service of the ruling classes, made essential contributions to the development and implementation of the scopic regimes of modernity.

Along this essay, we have tried to show how the vertical perspective has been defining itself as a new visual paradigm along the Twentieth century, going through a sudden acceleration in recent years that has imposed it as the scopic regime of the Twenty-first century. This process took place through the slow fine-tuning of a complex techno-social apparatus, including institutions, laws, devices, habits and a dense network of cultural artefacts that we have called, following Peraica, total images. Left on the margins of its elaboration, artists must, and can, recover an active role in investigating, understanding, illustrating, deconstructing, criticizing and sabotaging this apparatus, injecting entropy in the machine.

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