Visuality, Secrecy and Cartography: Reversing the Panopticon Through Counter-Mapping

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Abstract

We invoke a neo-Foucauldian model of the panoptic gaze to understand the practices of military visuality and of newly emerging efforts to resist and subvert deep-seated and long-held governmental secrecy over military/intelligence activities and their sites of operation. The case studies set out in the second half of the paper are attempts question excessive secrecy underlying the military panoptical power by conscious re-purposing of topographic mapping and remotely sensed imagery as an active site of resistance. They show the importance of a contextual reading of panoptic visuality in the post 9/11 era.

Keywords:

Panopticism, Secrecy, Visuality, Counter-Mapping, Power

1. Introduction

Towards the end of 2005 Rachel Woodward drew attention to the ways in which military activities are ubiquitous but unseen in the fabric and processes of everyday life. Often only those who control are able to see. It can be argued that there are strategic reasons for state secrecy with regard to particular visual technologies and that a tension is played out between freedom of information, confidentiality, and the relations between state and citizens.

There are many ways in which to see the world and many contested interpretations over the meaning and significance of different aspects of visual culture (see Sturken and Cartwright, 2001). Most however acknowledge that seeing casts a particular power: it reveals the hidden, conveys precision and offers a controlling power to the observing eye. There is also a general consensus that an elevated vision can appear to be a ‘view from nowhere’ which is closely associated with scientific and managerial approaches to the world. Military and state strategic interests derive much of their

power from this surveillant capacity, but their power may also be contested through visual technologies and critical representational forms and practices.

Here we investigate the interface between strategic deployment of visual technologies of mapping, aerial photography and, in particular, satellite imagery that have traditionally concerned geographers. We argue that a neo-Foucauldian analysis can allow us to see the significance of oppositional visualizations of strategic sites, and assess the significance of a situated reverse panoptical discourse (see Natsios and Young, 2001 for a consideration of this concept).

2. Panopticism

At the heart of the Foucauldian panoptic principle lies a mechanism for social control that works through the disciplinary power of visual examination. Through observation people are rendered as recordable, knowable, and controllable objects. Panopticism implies that everything is made visible at all times through the physical architecture of space, institutional structures and organisational forms of working. The goal is to turn individuals into compliant elements, in an economically productive process, what Foucault calls ‘docile bodies’.

Foucault’s analysis (1977) shows in detail how such surveillance works – ‘visibility is a trap’ (p. 200) – to enable the few to watch, and control, the many. He drew on a historical exemplar of the *Panopticon*, a model for a prison designed by Jeremy Bentham, in which inmates were spatially arranged in such a way to be under constant and unavoidable observation from unseen guards. Taking this prison design as a template, Foucault argues this kind of panoptic architectural model applies across a range of modern institutions that came into being after the Enlightenment in Europe. The result was a significant switch in the political order, away from sovereign power towards a society based on mass surveillance and control through institutions such as schools, hospitals and factories, using the inspectorial gaze of statistics, uniform metrics and clock time, civil registers and myriad other forms of bureaucratic record keeping (Joyce, 2003). Topographic surveys and cartography were also a crucial technology granting the state panoptic vision over territory and its population (Edney, 1997).

The panoptic machine can be characterised across five dimensions (adapted from Winokur, 2003): the form of its gaze; the nature of the space it produces; the type of authority it exerts; the extent of its operation; and how it becomes established through particular discourses.

In the Foucauldian model the panoptic gaze is cast in a single direction and with clear hierarchical effects. Power flows from the gaze in a top-down direction and imposes transparency. Disciplinary power works by being visible at all time, but is always unverifiable. Panoptic systems produce spaces arranged to facilitate continuous and unavoidable inspection. This is typically achieved by segmenting space into regular (cellular) units that can be seen, uniquely identified and classified at all times.

The third panoptic characteristic concerns normalising authority of disciplinary power. Behaviours that deviate from the norm can be seen and rational governance requires that they are punished. Panopticism also encourages self-disciplinary behaviour: people follow norms in part because of the threat of surveillance and the fear of being caught. If it is to work this authority must apply across space and through time. Panoptic machines seek (or claim) to be totalising so as to offer no chance for escape from the gaze.

The final characteristic of the Foucauldian panopticon is a particular kind of rationalising discourse that reifies the panoptic model as the logical way to organise institutional structures and working practices. Surveillance is seen as a rational, necessary and economically efficient way to ‘manage’ people. Furthermore, the discourse works by scripting objections to surveillance as a deviation from normality.

Some have questioned how useful panopticism is in accounting for contemporary social relations (e.g. Boyne’s, 2000, argument for a post-panopticism). But the concept continues to be widely used in political analysis of contemporary technological systems of mass surveillance of the state (see for example Gray’s, 2003, analysis of facial recognition systems in CCTV). And we argue it remains a useful framework for considering how far critical visual cultural strategies of scopic civil disobedience and counter-mapping can genuinely be said to be reversing the militaristic panopticon, in the post 9/11 world.

Despite criticism of Foucault's disavowal of human agency and people's capacity for reflective, creative, assertive action (e.g. Archer, 2000) there is scope for resistance in very midst of Foucauldian panoptic power. The Panopticon had within its architecture the facility for democratic 'accountability' of the watchers.

People can act against the panoptical model, by seeking to evade, deflect or counter-act the uni-directional gaze, its segmented spatiality, normalising authority, totalising nature and rationalising discursive strategies. We detail these strategies below but the focus of our analysis in this paper is to consider how mapping and satellite imaging technologies "which have enabled military and managerial surveillance of distributed resources also, paradoxically, enable the communities so scrutinised to develop their own distributed strategies and patterns of relationships with external parties" (Little, 2003: 11). To evaluate this focus requires a more detailed consideration of military vision, the nature of contemporary satellite imagery and of the visual possibilities of resistance.

3. The military gaze

Panoptical characteristics can be seen in archetypal state agencies such as the police, military and intelligence organisations. The militaristic logic of these state institutions rests in large part on their ability to render spaces and subjects visible at all times, without the surveilled knowing when or why they are being watched. The success of this strategy rests upon the exclusivity of these data and their secrecy.

Military exclusivity

In the history of modernism, mapping technologies are acknowledged as the militaristic gaze *par excellence* because of their ability to survey extensive areas and render complex landscapes into standardized, fixed, addressable and knowable visual symbols (Hannah, 2000; Pickles, 2004). Large scale national topographic surveys commissioned throughout Europe from the eighteenth and nineteenth centuries and extended to European colonies were established primarily to help military forces to maintain state control over territory. National mapping agencies almost all trace their origins to military needs. Military specifications still underlay most contemporary national 'framework' geospatial data-sets (Parry and Perkins, 2000). Many advances

in cartographic technologies in the twentieth century continue to be driven by the need to extend the range and diversity of the military panoptic gaze (see Cloud, 2002; Monmonier, 2002). Global Positioning Systems were initially developed to facilitate more accurate targeting of weapon systems, and it has also been argued that the development of GIS has been hugely influenced by military investment during the Cold War (Cloud, 2002). The technologies that are most significant for our argument here, however, concern the collection of visual data, and stem from developments in photogrammetry and remote sensing. Indeed, the scope of visibility over space granted by conventional cartographic representations has in many senses been surpassed over the last fifty years by the availability of pictorially derived panoptic gaze generated by aerial photography and satellite monitoring. It is these technologies that have supported the increasing resolution and accuracy of topographic surveys. Remotely sensed data themselves are also increasingly archived and displayed in military systems, with a progressive increase in sensor resolution.

So the 'best' mapping, in terms of coverage, scale, positional accuracy and currency, has been the exclusive preserve of the military, and the strategic advantages this panoptic knowledge brings have been jealously guarded by those in power.

Military secrecy and censorship

For panoptic visibility to be successfully deployed it needs to be un-verifiable. This has conventionally been achieved by cloaking military mapping and intelligence data gathering with national security blankets. There are many strategies: "epistemic silences" hide information deemed irrelevant by those in control of the discourse (product specifications often lead to whole categories of information being off the map); information is guarded and classified; maps in the public domain omit 'secret' detail; information is deliberately falsified, or the existence of mapping as a whole is denied.

Regimes of state-mandated cartographic secrecy are as old as the nation state itself. Harley (1989: 61-62) shows how the Casa de la Contración maintained the *Padron Real* in the early sixteenth century as a secret master map to protect the key discoveries of Spanish explorers. Commercial and strategic considerations cloud the apparent neutrality of the image throughout the modern state. In warfare mapping is a

closely guarded secret, deployed as a weapon to clarify the fog of war for friendly forces, but also as an obfuscatory tool to confuse the enemy. From Napoleonic battle plans, to secret trench maps of the First World War military strategy is played out or hidden through mapping.

A wide range of intentional and deliberate 'silences' on civilian maps is most associated with totalitarian paranoia (e.g., Postnikov's, 2002, study of Soviet cartographic deceptions). However, these 'silencing' practices are not limited to closed states. Throughout the Cold War military bases, nuclear and civil defence infrastructure and security installations were absent from large-scale topographic maps in a number of liberal democracies, including Ordnance Survey mapping in Britain (see Board, 1991; Hodson, 1999: 157-168). Withholding of information (so as not to unduly alarm the masses about the consequences of a nuclear attack), also served to cover extravagant expenditure, and the rhetoric of Cold War discourses (Hennessy, 2003). Facilities are hidden behind fences and anything that saw inside the fences was restricted. 'Silencing' itself can be secret: as Harley (1988: 306) observes "official map-making agencies, usually under the cloak of 'national security', have been traditionally reticent about publishing details about what rules govern the information they exclude especially where this involves military installations or other politically sensitive sites."

4. The transparent context-free image

Many aspects of national government and corporate activity now operate in a more transparent fashion in the new international political structures that emerged in the 1990s after the fall of the Berlin Wall. The demands of international trading and trans-national interactions in a globalising world have driven calls for more open government and greater social responsibility. Florini (1998: 53) argues that "the world is embracing new standards of conduct, enforced not by surveillance and coercion but by wilful disclosure: regulation by revelation". International bodies and NGOs publish audits of press freedom in different countries, 'score cards' on corporate ethics and environmental conduct, and tables on government corruption. Meanwhile an increasing number of governments are enacting freedom of information legislation (Banisar, 2004).

A small, but significant, element in these new mechanisms of more open institutional governance stems from the apparent transparency offered by commercial high-resolution satellite imaging (Baker *et al.*, 2001). Some commentators argue the unprecedented spatial detail, currency and competing availability of these systems create the possibilities of almost utopian change with more equal, democratic access to data in which "[n]onstate actors will be able to peer behind the walls of national sovereignty, accelerating a shift in power that is already under way" (Dehqanzada and Florini, 2000: v). But regarding these images from space as neutral, and as an empowering and seductive mirror-like 'view from nowhere' is deeply naïve. As Wood (1992: 48-69) shows imagery may be no less neutral than the culturally tainted map text. Images are embedded in their own cultural contexts. The aesthetic of abstraction and remoteness connotes the image as a document of truth, and hides the political work the image is employed to achieve.

It is undoubtedly true the pictorial value from high-resolution satellite imaging / aerial photography scores above the topographic map. The photographic quality of imagery data means familiar features are instantly recognisable and the image exudes an apparent naturalness. In many respect images also have an aesthetic appeal above the functional austerity of topographic mapping. Because of these affectual qualities the context in which images are released, deployed and presented is crucial. The politics behind which images are used, and how they are interpreted alters their rhetorical force.

In the years since the end of the Cold War there has been a significant switch from detailed satellite imagery that was previously secret and exclusive preserve of military-intelligence, to a much more global and commercial environment. By 2006 thirteen different countries had mid to high resolution systems in orbit and by the end of the decade there will be twenty (Stoney, 2006). Space Imaging's Ikonos and DigitalGlobe's Quickbird satellite imagery is available on international markets at sub-metre resolution.

Meanwhile the military have increasingly invested in geospatial surveillance systems, with security agencies actively employing imagery in the 'war against terror' (e.g., Beck, 2003). Imagery was used to build evidential pictures to support the case for the

Iraq war, and offered significant support for the prosecution of the campaign and for the political justification of the action (Richelson, 2003). Subsequent security applications include identifying possible sites of nuclear threats in Iran and North Korea. Unsurprisingly also, the largest demand for commercial imagery is from military and intelligence agencies in countries without their own spy satellite (Dehqanzada and Florini, 2000).

However, commercial interests increasingly threaten notions of a single military panoptic gaze. Livingston and Robinson (2003) argue that state regulation of high-resolution imagery is already impossible given the diffusion of the technology beyond the confines of U.S. legal jurisdiction and military power. These systems also challenge short-term military operational security: an enemy can now acquire data on the international market that might compromise military action.

Detailed imagery can be now be deployed progressively to help resolve international problems, for example in disaster relief, managing refugees, supporting peacekeeping missions, protecting human rights, or monitoring compliance with international treaties (cf. Baker *et al.*, 2001; Dehqanzada and Florini, 2000). Many of the auditing and verification applications for commercial high-resolution imagery are not dissimilar to longstanding research using lower resolution data from Landsat and SPOT.

News networks also increasingly employ satellite imagery. Transparency can be a powerful tool in the battle for news ratings. The harbinger of this kind of media exploitation preceded the end of the Cold War with the Chernobyl accident in 1986 being a key moment. Analysts in the White House may have had access to spy satellite images of the disaster, but the media also sought ‘visual proof’ of events. Journalists saw the news value of satellite imagery and succeeded in gaining access to commercially available images (Dehqanzada and Florini, 2000). The blurry 10 metre resolution SPOT image shown on ABC News on 1 May 1986 just days after the Whitehouse viewed the damaged reactor with their 15 cm resolution KH-11 images may have been crude and hard to interpret, but it showed the evidential power of the technology.

Whilst independently sourced, verified and interpreted satellite imagery has the power to puncture state propaganda and shift public opinion, the context in which it is produced, released and read is crucial. Parks' (2001) analysis of the use of satellite images of Srebrenica shows how the officially released U.S. military images of mass graves revealed much more than just location. The U.S. military delayed releasing the images until after the event, as part of a strategy of deception, which embodied a careful 'oversight' of the massacres as part of a distancing strategy from the conflict. The only large scale images released in the conflict 'revealed' the mass execution of Muslims, and served to condemn Serb aggression, whilst justifying the lack of action to prevent the massacre. The television news anchors described the images as evidence, but complex narration and graphics had to be employed to situate them into the news discourse and 'ground the orbital gaze'. Parks argues, therefore, for a witnessing process in which the use of satellite imagery must inevitably be questioned and in which the abstraction, construction and politics of the image is revealed. Detailed satellite images are ideal for television reporting because they purport to be able to 'show' the audience the reality of news: in practice the satellite view is disembodied, partial and clearly positioned.

Since the Bosnian war, remotely sensed imagery has become much more commonplace in the media to support the rhetoric of the news narrative. Web portals such as Google Earth now distribute seamless aerial photographic imagery of the USA and urban areas across the world, that are easy-to-use and offer qualitatively more information than ever before. These data appear seductively complete but complete oversight masks variable data quality and makes it hard to recognise individual sites. And commercial and technological forces for greater access are in tension with security concerns.

In the aftermath of 9/11, however, there has been a growing fear about the security of military sites and other 'critical national infrastructures' and this has lead to calls to limit the open distribution of detailed geospatial data (Zellmer, 2004). Late in 2001 the U.S. Department of Defense purchased exclusive rights to Space Imaging's Ikonos coverage of in the early phases of the war in Afghanistan in an attempt to maintain control over the public policy debate (Livingston and Robinson, 2003). Increasing paranoiac fears of terrorism following 9/11 led to federal agencies in the

USA rushing to withdraw mapping that was formerly in the public domain: strategic buildings were no longer visible on the MapQuest aerial photo database (Zellmer, 2004). Data formerly readily served from websites in the USA were suddenly no longer available (Monmonier, 2005). Despite subsequent recognition that very few data sets pose a significant threats, the balance between social benefits of freedom of information and the demands of Homeland Security has shifted. There is now a wider definition of 'sensitive sites', including infrastructure networks, water supply systems and nuclear power stations and continuing restrictions on some data (Tombs, 2005). It is tempting to read these restrictions as a rearguard action in the face of technological change and an attempt to regulate panoptic power.

5. Resistive visualities and counter mappings

The dominance of panoptic vision is being actively questioned and denuded, across a range of different registers within the context of contemporary technological developments in the capture, processing and dissemination of images by multiple actors. Admittedly this is often in fragmentary, small and subtle ways, but nonetheless in aggregate this is a significant trend that, we would argue, is opening up routes to democratic scrutiny and the active witnessing of state and corporate power.

There are many potential ways to resist, ranging from employing 'defensive' tactics of anti-surveillance technologies to evade the gaze, up to more active attempts to reverse its inspectoral glare. Typically this means that the 'watchers' themselves become subject to examination. Or the normalising authority can be undermined by mockery and rationalising discourses counteracted through satire (e.g., by defacing corporate billboard advertising; Dery, 1993). Others follow a more directed, embodied engagement with surveillance assemblages (e.g., expeditions to 'see' Area 51; Paglen, 2006). For a generation or more, activists have deployed photography, and increasingly, video images as a tactic in their protests (Harding, 1998). As affordable, reliable and easy-to-use imaging technologies proliferate, they are granting more people the capability to be producers, and thereby greatly increasing the scope to reverse the panopticon. Docile bodies become invigorated as citizens visually record their environment and their experiences. 'Amateur' video has become a staple of television news. The grainy, indistinct camera phone images taken by people caught up in the Tube bombings in London in July 2005 speak to the potency of this new

counter-hegemonic force. And artists are participating in turning attention onto the surveillance machines by ‘performing for the cameras’ (Schienke, 2003), or participating is acts of ‘sousveillance’ creating alternative technologically mediated views and performances from below, instead of submitting to the monolithic and controlling gaze from above (Mann, Nolan and Wellman, 2003).

The Internet as medium is also significant as it is able to ‘super-empower’ individuals and small groups to reach across scales and connect with mass audiences. The emancipatory potential of the Internet as a site for globalising local resistance has been a source of significant debate over the last decade (e.g., Warf and Grimes, 1997). But there is strong evidence that the Web is enabling rapid circulation of images and their interpretation often unmediated by hegemonic forces of the state or large corporations. This democratisation of access can impact on powerful institutions that prefer to work hidden from public view. The military and state security-intelligence apparatus, in particular, continuously struggle to deflect scrutiny and even more so since 9/11. From the ‘leakage’ of photographs of prisoners being tortured by U.S. soldiers in the Abu Ghraib prison in Iraq, to plane spotters across the world logging flight patterns and in so doing helping human rights activists and investigative journalists to expose the secret CIA program of extraordinary rendition in Autumn 2005, what emerges is a kind of counter-mapping of CIA operations based on a collective amateur gaze. And counter mapping extends well beyond this context.

Whilst much research has focused on the role of mapping and GIS in participatory democracy, truly anti-hegemonic counter-mapping, able to challenge power relations by highlighting social inequalities, has grown apace in the last twenty years and now forms an important field of research for many scholars who are interested in critical cartography (Harris and Hazen, 2005). Published maps embody a practical and rhetorical power to articulate alternatives. These alternative maps can be used to re-frame the world in the service of progressive interests and challenge inequality. They have been used to reaffirm the rights of indigenous peoples; argue local cases in resource struggles; confront globalisation and multinational power; encourage community involvement in sustainable lifestyles; re-assert the role of the past in contemporary contexts; or celebrate the aesthetic and local in an age apparently dominated by uniform and mechanized production and global style. Cartographic

power has also been exploited to counter dominant corporate discourses, using the authority of the map against itself.

In many examples of counter-cartography, the maps themselves are not radical in terms of design. Instead conventional cartographic signs are used (e.g., Kidron and Segal's, 1995, use of choropleth mapping or the 'logo-map' of a nation state's outline re-imagined as a potent emblem in anti-colonial struggle; Huggan, 1989). The distinction that marks these mapping projects as 'subversive' is that they ask difficult questions by mapping human phenomena such as war, poverty, or violence against women and landscape features such as toxic waste sites that are usually deemed insignificant, inappropriate or 'difficult' by mainstream cartography and therefore left unmapped. They confront social norms by using conventional signs in new ways. Other significant tactics in counter-cartography include changing scale to open up authorship, for example in eco- and community mapping, where local people employ mapping to assert their claims (Aberley, 1993), and the empowering of marginalised groups, such as when physically disabled people map their own experiences of ableist streetscapes (Kitchin, 2002).

The satellite image may also be re-imagined and subverted. Imagery may be used in artistic works: to reassert the beauty of abstracted landscapes, or to problematise the apparently all-knowing nature of satellite-based surveillance and reveal the bodily practices denied in the panoptic gaze (see Biemann, 2002). Bottom-up networks of hobbyists sharing information can work to expose (to some degree) the operations of secret organisations. The machines employed to capture the gaze may themselves be watched. Keefe (2006) describes the activities of satellite watchers who share technical information about satellite orbits and track evidence of their paths. There is a growing appreciation of the complex politics implicated in the visual power of the remotely sensed image (see Parks, 2001; Yusoff, 2005). These critical works stress the need to analyse processes as well as the forms of resistance and argue for a contextual appreciation. The remainder of this article focuses attention on just such an analysis of two contrasting projects that seek to reveal the secret.

6. Reversing the Panopticon: case studies

Systematic counter-mapping projects can challenge public policy on government secrecy, rendering hidden military bases and security installations visible once more. Their tactic of exploiting mapping and imagery can be read as placing the panoptic spotlight back onto the powerful, albeit in a small way. The following case studies show the clearly situated nature of these oppositional (re)viewings, and highlights the need to view much more than just the image (Table 1).

The Eyeball Series

Activist and anti-secrecy archivist John Young's ongoing project consists of series of individual 'eyeballing' Web pages, each of which focuses on a particular military base, intelligence facility or other 'sensitive site', like nuclear power plants and dams. 'Eyeballing' exploits the potential of hypertext to author a cartographic collage, piecing together a diverse range of aerial photographs, topographic maps at different scales, photographs, along with interpretative commentary by Young, annotated with corrections and clarifications emailed in from (usually anonymous) readers. There are also hyperlinks to supplementary documents and other relevant websites, while individual 'eyeball' pages are themselves cross referenced by hyperlinks. To produce the 'eyeballs', Young utilises public Internet sources of maps and imagery, typically topographic mapping from MapQuest, and Google Maps, supplemented with aerial photography and satellite imagery from Terraserver and USGS. Even though the 'eyeballs' have an unpolished, amateurish look to them, the series represents a novel and valuable atlas of hidden places.

Each eyeball spatialises a particular story of a hidden, sensitive site, encouraging the reader to actively explore and think what happens there. As of June 2006 Young has created 353 separate 'eyeballing' Web pages and the thematic scope of the series continues to expand. So far the *Eyeball Series* has covered airforce and naval bases, the FBI, the CIA, the National Security Agency, GCHQ, MI5/MI6, nerve gas storage facilities, nuclear power plants, dams, numerous little known intelligence listening posts, as well as the Kennedy Space Centre, the Statue of Liberty, the Bush family ranch in Crawford, Texas and government bunkers (see Figure 1).

Young has a political agenda in creating the 'eyeballing' map montages, to show people the places that the powerful do not want the rest of the community to know or

think about. The mapping of facilities related to America's continued maintenance of weapons of mass destruction, for example, is designed to expose the hypocrisy of the Bush Government in relation to nuclear non-proliferation. The *Eyeball Series* project is dedicated to exposing overbearing government and corporate secrecy, seeking to reveal the murky workings of powerful organisations that wish to operate hidden away from public scrutiny. Young achieves this by the disclosure of sensitive and controversial documents via a unique information repository, an anti-secrecy library on the Web, called *Cryptome* <http://cryptome.org>. This is an important node in the network of websites concerned with freedom of information, challenging powerful interests particularly in the areas of surveillance technologies, digital rights and cryptography[1].

Public Eye

Public Eye is an initiative developed in the mid 1990s by policy analyst John Pike. Since 2000 this initiative has been part of GlobalSecurity.org, which now markets itself over the Web as "the leading source of background information and developing news stories in the fields of defense space, intelligence, WMD and homeland security" (<http://www.globalsecurity.org/org/overview/history.htm>). Like the *Eyeball Series* it draws upon satellite imagery and other image sources in the public domain to reveal hitherto unknown information to wider civil society. Pike's remit, however differs from John Young's. His concern is to inform the public policy process and to increase the capacity of the non-governmental community to influence debates. The aim is to compile complete coverage of all weapon-related secret sites, with historical and contemporary image data as well as site profiles. And, in order to provide a one-stop web-served source of security data, the site has become very much part of the system that it documents, rather than serving as a critical outsider.

Pike first employed declassified cold war CORONA imagery, together with declassified U2 aerial imagery, USGS aerial coverage and topographic quadrangles, or JOG graphics, alongside coarser resolution SPOT, and Landsat imagery to provide context around the larger sites. From 2000 onwards Russian imagery became

[1] Others include the Federation of American Scientists (www.fas.org), the Memory Hole (http://thememoryhole.org), and the National Security Archive at George Washington University (www.gwu.edu/~nsarchiv).

available from Terraserver, along with Space Imaging's IKONOS data and subsequently Quickbird imagery from Digital Globe. The most appropriate sources are used rather than following a standard pattern (see Figure 2).

In *Public Eye* these images are deployed in two systematic but complementary programmes. A baseline campaign documented the global inventory of special weapons and related facilities, displaying images of facilities ranging in scale from individual structures up to large areas and displaying imagery of 1100 facilities by mid 2000. Higher resolution imagery has been deployed in the priority campaign focusing attention on the newer or more opaque facilities being developed, and in particular outside the USA. Online profiles describe existing facilities and the development of a site and are accompanied by maps, imagery and often photographs. Images are almost always interpreted, if only by caption (see Figure 3). They may be accessed from a *Public Eye* section of the Web site that focuses upon imagery, organised on an image a week basis, or from thematic information organised under the headings Military, WMD, Homeland and Space, or from a sophisticated search system. These 'Pictures of the Week' (archived back to 2001) feature timely stories that are placed on images, with sufficient precision to elucidate an event, usually with an accompanying storyline and often with captions. Recent examples almost all employ Digital Globe imagery, and have started to use Flash-based animated explanations of the story line.

The content is disseminated free to air, but commercial adverts are juxtaposed with imagery. For example UK viewers were presented with adverts for two different Broadband vendors, a Walkman phone, Google ads for Web sites with content relevant to the image being consulted, and a series of military adverts for example pointing the user towards a job in Homeland Security or encouraging them to buy a waterproof military PA system. Sponsored links also appear and banner adverts link to popular websites. In stark contrast to the *Eyeball Series* the impression is of a slick, fast, commercial Web environment.

Harris (2005: 18) argues that Pike's work is best understood as part of a realist narrative of transparency which provides "both the narrative structure and the techno-discursive anchor for satellite imagery systems in the social and cultural mindset".

Globalsecurity.org situates imagery into a narrative aimed at news organizations, existing, former and potential members of the military, defense contractors, congressional staff, academics, students and the wider public. The Web presence is tailored to 5 different target audiences: subject matter experts, senior leaders, junior staff and interns, concerned citizens and news reporters. The emphasis of this market is mainly American. The site serves 500 000 page views each day and only 20% of the 2.5 million monthly visitors are repeat users.

So *Public Eye* is embedded in a Web site with a much more mainstream and commercial agenda – whose remit is to provide quick access to breaking stories, and background reference material in multi-mediated format. A very wide audience is able to view images of otherwise perhaps unknown sites. For the organisation to thrive and grow it must be authoritative and appear neutral, but for this to happen advertising revenue must flow. Unlike the *Eyeball Series* project the gaze is focused in a timely way on whatever story is high on the news agenda. Whilst American bases feature in the site, (and very strongly in the WMD section) the weapons programmes of North Korea, Pakistan, Israel and Iran are of equal concern to Pike. The aim is better policy and more open government, rather than critique alone.

7. The impact of counter-mapping

Clearly these two projects seek to question the dominance of the militaristic gaze but their impact on public consciousness and government agencies is less clear. The extent to which they really represent a reversing of the panoptic view varies.

Both of the sites provide a new vision that stimulates the imagination and hints at more than can actually been seen, making the viewer feel somehow illicit in looking straight down onto some of the most secure and sensitive places on earth. They give a thrill at seeing things we are ‘not meant to see’, that are for authorised eyes only. The maps and imagery are entirely conventional, legal and publicly available and the subversive feeling is created through the focused selection and unconventional arrangement of maps, images, interpretation and commentary.

The matter-of-fact reality of much of the visual and cartographic information presented in these projects is useful to challenge the myths that grow around secrecy.

The *Eyeball Series* in particular helps to 'ground' otherwise murky, anonymous and deliberately intimidating institutions, when one can see that they inhabit ordinary office buildings, in a beltway sprawl around Washington D.C. for example (see Natsios, 2005, for a consideration of the hidden post 9/11 national security apparatus in Washington DC). It begins to reel them back into our everyday reality from some kind of *X-Files* fringe (Dodge, 2003). So this kind of mapping dissolves mystery, but also invites a questioning of the power of the unannounced infrastructure around us.

Even very detailed maps and images, however, can only tell us so much. These projects are working within the constraints of available public spatial data sources, which are often partial and out of date. Military analysts almost certainly work with data that are more current and fit to purpose. They can commission new scenes to be archived, or employ experts to use sophisticated image analysis software to extract patterns from the visual complexity of a scene. In contrast public data sets may lack essential metadata. The *Eyeball Series* is hampered by this dating problem. Also image resolution varies across the globe: of the two case studies only *Public Eye* consistently acquires dated, high resolution imagery.

The nature of site interfaces limits their power to critique. Neither project claims to offer a complete evaluation of secrecy. Both select, but the nature of the selection process is not always at all clear. *Public Eye* offers the most comprehensive global coverage, but often only through other headings on the globalsecurity.org Web site.

The extent of hyperlinking varies and so does the nature of search capability. The *Eyeball Series* only offers a crude listing of sites by date, supplemented with a Google-based search engine. *Public Eye* also focuses upon timing of events as the prime way in to reveal secrecy along with a Google search. If you want to find out what is dangerous near to your own backyard these two projects are of only limited use. Overview maps to allow a consistent or progressive zooming in or out, that might reveal context or association are not presented on either site The consequence is that both of the case studies present a strangely atomised view of a secret world of isolated sites. They focus attention on a specific placing of secrecy, rather than its ubiquity.

Also, these sites only scratch the surface of what is going on at these hidden and sensitive places. The glimpses of visible structures are far from being panoptic and only give a limited sense of the implications of what is being performed daily. Viewers must rely upon the site's interpretative commentary to understand the image. Critical commentary is constructed by outsiders, who must rely upon public domain sources. Dehqanzada and Florini (2000: 8) acknowledge that "It takes years before an analyst gains the experience and expertise necessary to be able to derive useful information from gigabytes of transmitted data." Experience in recognizing troop movements differs from expertise in recognizing nuclear testing or in environmental assessment. These skills are largely the preserve of the establishment, not the critics. Only *Public Eye* offers really detailed interpretation, and this is often tied to a news narrative rather than offering s systematic documentation of the site.

Nor can the interconnections, flows and chains of command, vital to the working of many hidden places, be observed in static images of facilities. By focusing on containers not practices these sites tend to replicate the notion that space can be seen and understood as a set of structures such as fences, buildings, or fixed marks on a map, rather than a set of social practices that are performed in particular places to beckon spaces into being. So aerial photographs, topographic maps and satellite imagery can only hint at the nature of power, they cannot actually show us power relationships. Florini (1998: 60) observes that for secret sites "[t]ransparency reveals behavior, but not intent."

Employing these visual technologies to reveal secrecy also leads to a strongly dehumanised view. It replicates the 'god trick', and perhaps reinforces the importance of an objectivist, surveillant geographical imaginary, instead of offering an alternative to the panopticon. Places are mapped without people or feelings. Only the *Eyeball Series* seeks to personalise secrecy, by focusing on individuals' roles in the production of secret power and (for some stories) including photographs of individuals, in a 'bricolage' of different media (see Figure 4). A more artistic critique such as that offered by Paglen (2006) is less likely to be tainted by the power of the gaze.

Moreover, organisations with something really worth hiding often put their most sensitive sites fully underground. Maps and images showing access roads and entrance portals to bunker complexes only give the barest hint of their subterranean extent. Also nowadays much of the secret work of the military and intelligence community is actually transacted in cyberspace, in the data networks, servers and webs of encrypted information flows, which are completely invisible to conventional cartographic display of physical facilities. With the growing recognition that detailed vision is no longer restricted it is likely there will be more attempts to conceal secret sites, as more people realise the capability of satellite observation.

Nor should we be naïve about the critique offered in the case studies. The visual medium may imply evidential transparency, but selection, interpretation and context reveal the very positioned and largely unaccountable nature of the critique. Florini (1998: 61) argues NGOs and activists are "unelected, unaccountable, and sometimes less transparent than the institutions they monitor"; nor do they offer any "guarantee of action or progressive change". Whilst both case studies would claim their work advances the cause of open government it could be argued that *Public Eye* merely accentuates the newsworthy in order to increase its market share and that the *Eyeball Series* is too removed from the policies of secrecy revealed in its sister site *Cryptome* and too overtly activist to be taken seriously.

Whilst the case studies offer new views there is little evidence of the cultural impact of the critique. *Globalsecurity.org* lists impressive numbers of hits on its Web site, but the military advertising and marketing of the site suggest only a small percentage of these users are concerned with critique. The *Eyeball Series* does not publish records of the number of hits.

There is indirect evidence of cultural impact in the form of reaction. The *Eyeball Series* and *Cryptome* have been a clear concern to the American establishment since 9/11. Early in 2005 Readers' Digest ran a strongly critical article attacking web-based, security breaches, and focused on Young's *Eyeball Series* website (Crowley, 2005). The article described the site as dangerous and irresponsible and juxtaposed an attack on open government with a cartoon featuring an Islamist viewing a website and proclaiming "Site Maps, Security Overrides, Suggestions. Download Now! It's Safe -

It's Easy - It's Protected by the Constitution." The voices of the right in the U.S. clearly think sites such as the *Eyeball Series* threaten their agenda!

8. Conclusions

The counter-mapping case studies presented in this paper only give a pin hole view into the world of secret and sensitive sites and there are dangers exaggerating their cultural impact. Nevertheless they offer a disruptive view, and being freely distributed through the Web, it could be argued that these 'eyeballs' are potent maps of resistance to the growing secret state. They focus attention on sites that would otherwise be lost in space. But reversing the panoptic tools of the watchers is clearly only part of a much wider process of democratising cartographic surveillance. Making the Panopticon, in Foucault's (1977: 207) words "...constantly accessible 'to the great tribunal committee of the world'", over the Web is long term project, and one that will be contested. It is important to be aware that vision is positioned and to appreciate the contextual importance of practice in the construction of oppositional discourse.

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Table 1: Summary of counter-mapping projects.

Name	*Public Eye*	*Eyeball Series*
Web location	www.globalsecurity.org/eye	www.eyeball-series.org
Authorship	John Pike, security commentator and activist	John Young, architect and anti-secrecy activists
Start date	1995	2002
Aim	Intelligence-style photo-interpretation of high resolution satellite imagery of military bases and nuclear sites	To document sensitive sites, principally in the U.S.
Content / style	Montage of aerial photographs, maps and texts	Multimedia presentation of maps, images, photographs, text and hyperlinks to other documents

Figure captions.
(Note, reduced quality compared to Web versions due to image capture process.)

Figure 1: Part of *Eyeball Series* page on Site R – Raven Rock (March, 2002), <http://cryptome.org/site-r/site-r.htm>.

Figure 2: Part of *Public Eye* page on North Korea's Yongbyon nuclear facilities (December 2002), <www.globalsecurity.org/wmd/world/dprk/yongbyon-imagery.htm>.

Figure 3: Image from *Public Eye* page on North Korea's Yongbyon nuclear facilities (December 2002), <www.globalsecurity.org/wmd/world/dprk/images/yongbyon-cib1.jpg>.

Figure 4: Part of Eyeball Series page on Michael Hayden, CIA director (May, 2006), <http://cryptome.org/hayden-birdseye.htm>.