THE MEDIATED CITY CONFERENCE
Architecture_MPS; Ravensbourne; Woodbury University
Los Angeles: 01—04 October, 2014

URBAN UTOPICS AND THE NEW DIGITAL VIEW

GAVIN PERIN; LINDA MATTHEWS
UNIVERSITY OF TECHNOLOGY, SYDNEY

INTRODUCTION

The proliferation of images in the contemporary information economy poses a unique problem for civic authorities whose job it is to control the image of the city. The politics underwriting both representational democracy and capitalism make it tactically difficult and economically inefficient to police image production. This means Foucault's model of a "vigilant architecture" has less traction than Georges Bataille's "convex, frontal, extrovert" architecture. (Hollier 1989, X (10)) As such, any control of the city image requires a persuasive manipulation of digital imaging technologies. In this respect, the promotional Internet Protocol (IP) webcam image is one significant example of how the digital technologies of image production and dissemination mediate power and influence.

The institutional use of the promotional IP webcam instigates a distinctive urban condition. While Washington's L'Enfant Plan is one of the most complete examples of an extroverted axial urbanism, its potency is based on the corporeal presence of the architecture and not its imageability. Any subsequent image is subservient to this logic; the image is a formal after-effect. In contrast, the webcam functions through a second disembodied digital aerial viewpoint. The digital technologies underpinning this view establish an image-based formal logic that sits outside established urban theories.

The unique questions raised by the webcam are as much a representational issue as they are formal; meaning their politics are best understood by interrogating how these images say what they say. The issue of image and representation makes Louis Marin's (1984, 201-232) exploration of the mediation of power through select city maps or portraits particularly relevant. Notably, Marin's comparative analysis of El Greco's 1609 'Painting of Toledo' with Merian's 1615 and Gomboust's 1647 Paris maps reveal how different representational forms reveal the authority sitting behind these 'portraits'. Marin's distinction between narrative and descriptive images is a useful scaffold by which to understand who is the idealised subject of the aerial 'utopic' city view. In respect to the IP webcam, any understanding of this subject cannot be divorced from the technological basis by which the digital image mediates form. Furthermore, Marin's analysis helps frame how any disruption to the image alters the politic operation of these emblematic, descriptive images.

THE TECHNOLOGICAL LIMITS OF HUMAN AGENCY

For a discipline heavily indebted to images, architecture is deeply suspicious of the semiotic reading of form and generally disdainful of the crass commercialization of its objects. The belief is that the plan, paraline, diagram and perspective furnish more authentic images because they index form before they seduce the viewer. The lineage of this belief is lost in the discursive ruptures separating Brunelleschi's 'invention' of perspective, Adolf Loo's criminalization of ornate figures, Debord's 'society of the spectacle' and the semiotic excessiveness of every postmodern architect. What can be said is that this murky history has pathologised any form that has been figured "to a *prior* imaging." (Corner 1999,

153) Yet this rejection of the image as being procedurally and intellectually bankrupt comes at a cost. The retreat to the drawing ignores the politics of the image, which many argue is the base currency of the information economy. (Lyon 2002) The believed authenticity of architecture's established representational modes also denies the propagandizing potency of all images. The net result is that the discipline fails to question any of the images it denies or supports.

There are only a handful of architects and urbanists willing to accept the dictates of the information economy. For prominent Australian architect Carey Lyon (2002), the marketed image operates literally as a formal template. This approach aims to impart truth to the marketed image, effectively making it deliver on the promise made by the image. Anna Klingmann (2007, 3) instead sees branding as a way to provide "an authentic identity for people and places." Like Lyon, the problem for Klingmann is not the economic functioning of the system that constructs brands, but rather that design fails to offer local communities brands and images that accord to their own 'authentic' image. Klingmann's argument runs an interesting parallel to Kenneth Frampton's taming of modernism through regional specificity.

In any case for both Lyon and Klingmann, authenticity is established through attaining formal fidelity between image and object. James Corner (1999, 158) summaries the problem with this approach when arguing that imaged-based scenography "retard[s]…authentic public life" by not "confronting the problems of contemporary life." Furthermore, any capacity of branded architecture to form "an interactive consumer experience" does not convincingly address Klingmann's (2007, 8 & 4) own critique that contemporary architecture and urbanism "simultaneously represent and support the ideology of capitalism." In any case, Klingmann and Carey have no ambition to modify architecture's established representational forms or contest the economic basis of the information economy.

It is clear that Corner's (1999, 158) essay 'Eidetic Operations and New Landscapes' agrees with the common criticism that postmodern signification reduces built form " to simply expressing or commenting on…[the human] condition." While Corner is concerned with the problems scenography poses for landscape architecture, his differentiation between the picture and the image nevertheless returns political agency back into the act of drawing. Corner explains that his essay is a broad survey of alternative drawing practices.

Without doubt, Corner's position makes sense. It is after all impossible after Robin Evans' (1997) essay 'Translation from Drawing to Architecture' to disregard the effect of the drawing on form. Yet Evans also acknowledges that the act of translation inevitably privileges things of interest to the author. Corner's faith in an eidetic imagining does not necessarily enable a strategic engagement with the politics behind the image. This is not simply a problem that every drawing involves a selective and reductive extraction of information. The capacity of a drawing to be instrumental and representational does not alone mean it is devoid of ideological projection. True agency is not guaranteed simply "by framing the issues differently". (Corner 1999, 165) In the end, Corner wants drawings that are interpretively open and yet instrumentally authored. The belief that the eidetic drawing has a positive outcome only idealizes the drawing space as a site of authentic action. What this means is that the drawing is the site where meaning is projected into the world.

Corner's faith in the drawing reinforces the belief of anthropomorphic control over the technologies of production. Yet, architecture's societal agency cannot simply be seen as the construction of effective mediated images. As Friedrich Kittler and Matthew Griffin (1996, 721) write in 'The City is a

Medium', "no system...is self-governing." By extension, the internal machinations of contemporary 'technology' operate without any interest in humanity. In a counter to Heidegger's (1977, 302) humanism, the 'enframing' capacity of modern technology always disciplines humanity and not the other way around. If the city itself is outside its own control then one must discard, absolutely, any capacity for anthropomorphic control.

Herein, lies the fundamental weakness in Lyon's, Klingmann's and Corner's approach to meaningful images. Lyon and Klingmann over invest in the message rather than the medium, while Corner over invests in a medium that is divorced from those technologies that shape the city. If, after Marshall McLuhan's (1995, 7) oft repeated mantra "the medium is the message", Kittler's radical post-humanism ensures that our relationship to technology is, at best, parasitic. Kittler's radical reframing of McLuhan suggests that the politics of the city image constructs a city that is neither an assemblage of meaningful objects nor a product of authentic disciplinary drawings. Instead, agency involves an opportunistic manipulation of the mediating technologies that construct the city portrait. Here, action involves intervening in the material and immaterial systems operating across the "complex knot of networks...[that] surpass the planning ability of the engineers". (Kittler 1996, 721) This ensures the exploitation of the system is less a question of controlled effect but of indirect and somewhat unknowable affects.

NEW TECHNIQUES OF DISRUPTION

In the chapter 'The City's Portrait in its Utopics', Louis Marin (1984, 202) argues that the descriptive image is that it "must totally reveal its object." Developed "against the grain of narrative", description must conceal "its successive nature and present it as a redundant repetition, as if *all* were present at the same time." (Marin 1984, 202) Under this definition the promotional city image fashioned through IP webcam systems procures purely emblematic, descriptive images. Obviously, there are parallels between Merian and Gomboust's Paris maps and the IP webcam view. The most notable being that both are situated in a 'utopic', nowhere space. While the ability to zoom and scan the view modifies the capacity of the image, this operability does not alter the fact that the image's visual hierarchy is centered on iconic elements that are meant to 'stand for' the experience of the whole city. In this scenario, political agency becomes linked to challenging the 'utopic' subjects of the aerial city view through disrupting the image's technical means of production.

The real differences between the IP webcam view and Merian and Gomboust's city portraits rise from the type of image and its mode of production. Importantly, these differences reveal different 'utopic' subjects. As Marin's (1984, 215 & 226) diagrams illustrate, the combination of narrative and descriptive images and text reveal Merian's subject to be the city itself, while for Gomboust it is the King's Palace. The subject of the promotional webcam differs because it is first and foremost a descriptive image. The emblematic quality of the IP webcam view clearly provides a portrait of the city that speaks directly to the image's civic sponsors. However, the facility to pan and zoom allows the virtual tourists to project their own narrative journeys into the captured site. Unlike the Paris maps, where separate narrative and descriptive images work together, the camera's operability collapses narrative into descriptive form. This important difference extends its 'utopic' subject to include both the civic authorities and the virtual tourist.

The second significant point of difference between the IP webcam image and Merian's and Gomboust's Paris maps lies with their means of production. Like the Nolli Map, the expense in producing Merian's and Gomboust's maps guaranteed they were intended for a limited audience. In contrast, the digital image is highly reproducible and easily disseminated. The *affordability* of the image is important because it foregrounds the pixel's capacity to layer and process highly specific qualitative data. The pixel, as the base unit of the contemporary image, ensures that color and contrast become the primary compositional and elements of image making. The trick of the pixel is that it appears to present the world according to the projective geometry of linear perspective. However, the discrete packaging of visual data in the pixel means that lines exist only when aligned pixels share the same color and contrast. As Klette and Rosenfeld (2004, 15) illustrate, lines do not actually exist because, geometrically, there is no common connecting or intersecting pixel. In the digital image, spatial depth is determined through color and contrast shifts rather than by a set of lines receding to a shared vanishing point on the horizon.

The hardware and software governing the digital re-presentation of color and contrast involve numerous interpretative steps. The primary aim of these procedures is the same: to deliver a smooth, moving image that establishes a visual hierarchy in the image. (Cantoni 2011, 12) In the IP webcam 'pipeline' there are three important technologies that facilitate the curatorial procedures of color composition, image hierarchy and the removal of visual anomalies. The first technology is the Color Filter Array (CFA) that, located directly above the pixel sensors, identifies the color in each pixel according to the additive RGB model of color mixing. It is worth noting that this means these sub-pixel sensor patterns always limit the re-presentation of color to the RGB spectrum. The second technology is an algorithmic process where a 'scan order' pattern selects and privileges image content. In this system, color and contrast are determined by the order in which the CFA pattern is read. The third technology is another algorithm that attempts to remove visual anomalies, with diffraction being the most persistent anomaly camera manufacturers wish to avoid.

All these technologies aim to provide the best possible likeness of the real. This sentiment is demonstrated by Rastislav Lukac et al (2005) when discussing the value of different CFA arrangements. Importantly, the organization and distribution of the pixel within the CFA aims to provide the highest level of image color optimization for camera hardware producers. The desire for image synthesis results in the use of interpolation algorithms that 'guess' absent or incongruent data. (Poynton 2012, 347) At the same time, camera manufacturers are reliant on a small number of third party proprietors to develop the performative standards governing how these systems re-present the real. As with the dictates of the RGB spectrum, these industry standards establish a set of hidden aesthetic assumptions about what constitutes a good image.

In noting the thinness of research into the industry standards governing different CFA patterns, Lukac et al (2005, 1260) actually argue that color curation advances particular proprietary interests. What is interesting is that each of the sub-sampling filtering procedures mentioned erases the very presence of the technology itself. The problem with the image processing 'pipeline' is that each system conceals the proprietary interests and embeds these within each city image. These are highly orchestrated visual experiences of the city, where the politics of the view digitally manipulate the primary compositional and structural elements to 'cleanse' the view of disruptive visual effects. The desire to maintain the integrity of the promotional city image ensures that disruptive phenomena are minimized across the webcam network despite the fact they register both the presence of a mediating technology and the activity of the city. Clearly, the pixel marks the divergence between traditional and contemporary

image-making procedures. However, it is just as evident that the digital mediation of architectural and urban form locates these proprietorial authors as a third, hidden, 'utopic' subject of the IP webcam view.

Tests[1] reveal that the application of the CFA, scan order and diffraction patterns, at the vastly increased scale of a material façade arrangement, directly interferes with the internal processing functions of the camera. In such scenarios, the architect can draw upon the geometry of diverse pixel arrangements on the viewed surface to predictively override and control the reception of the urban context over the Internet. By extension, the duplication of these micro-geometric patterns disrupts the politics of the privileged 'utopic' subject but disrupting the view. Depending on the technical protocols, these built surfaces can initiate such effects either by repeating or varying these patterns. Notably, the success of these formal interventions is intrinsically linked to the webcam's pan and zoom function. In an odd inversion of time-motion studies, knowledge is gained through the movement of a recording tool rather than the body. In the case of the CFA pattern, variations to the 'tried-and-tested' proprietary patterns, such as the Bayer Filter Array, can allow the designer to modify the color and luminosity of the image. Such variations can be achieved by applying non-traditional red, blue and green patterns to a facade. The benefit of this approach to building design being that the designer can recalibrate the color rendering of the site and even alter the visual hierarchy of the image. (Figure 1) Alternative disruptive effects can be obtained by transposing rescaled scan order sequences or diffraction patterns as façade fenestration patterns. For example, variations in scan order pattern

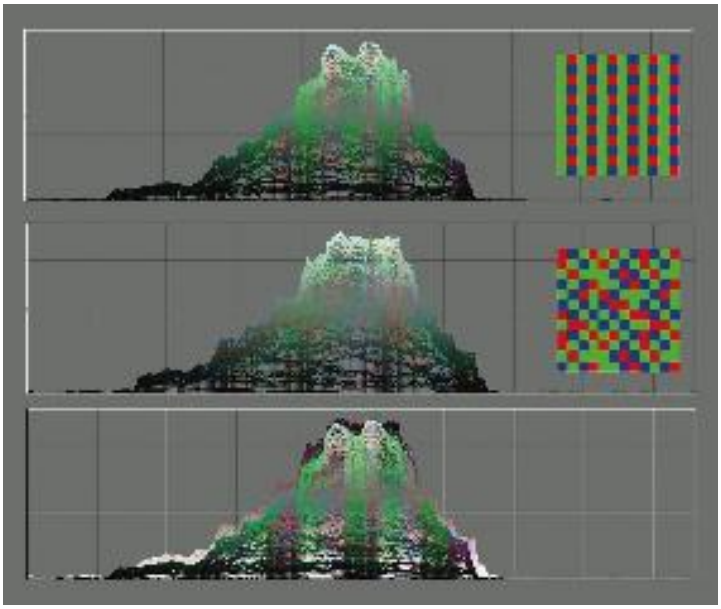

Figure 1. Montage showing the difference (bottom image) between the camera's reception of the luminosity and colour emission levels of two different Colour Filter Array patterns (pictured to the right of the image) with different distributions and equal amounts of colour when transposed into a translucent material surface.

[1] This work forms part of the ongoing research of a PhD thesis currently being undertaken by one of the authors of this paper.

type and orientation results in pronounced disruptions to the image as the camera zooms in and out. (Figure 2) The digital image is as equally disrupted by transposing the Fraünhofer, or far-field, diffraction pattern onto a façade. Acting in conjunction with the moving camera, the use of this pattern reverses the camera's capacity to read the same surface pattern when captured by the camera in its non-diffracted form. (Figure 3)

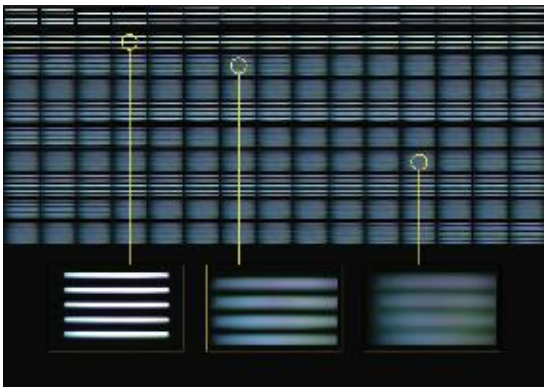

Figure 2. Video montage of a scale model of a horizontal scan order pattern, showing the camera's repeated unsuccessful attempts to resolve the focus of the image.

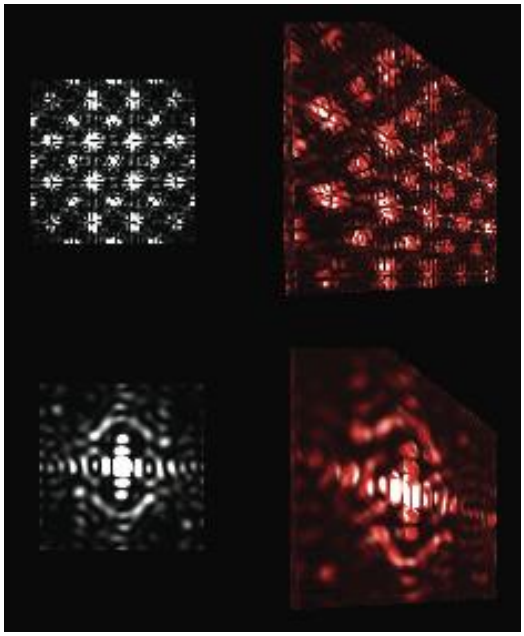

Figure 3. Two Fraünhofer diffraction patterns (left) transposed into hypothetical building façade diffraction gratings (right)

CONCLUSION

As Marin shows, the visual conceit in the early cartographic representations of the city reveals deeper ideological intensions. For Marin (1984, 230), the beauty of El Greco's portrait of 'Toledo' is that its visual axis effectively "figures the deconstruction of the representation". El Greco's genius was to disrupt the functioning of the narrative and descriptive image-forms in the painting. Marin sees this as

an opening up of a representational discrepancy, exposing the difference between the real and the represented. In fact, El Greco's portrait of Toledo "*shows* the shift and spacing between the map and the landscape…[and] *signifies* the substitution between the orders of painting and nature. (Marin 1984, 231) Of course, the city portraits discussed by Marin are in a sense fixed images. They can only be critiqued. The dilemma with the promotional use of IP webcam image is that the politics of persuasion requires content to be released back into the world. The inherent openness of this webcam content means these images can be contested. In questioning the structure of the sanctioned city image, action is now extended to hijacking the predetermined viewing hierarchies of the image.

While there are three 'utopic' subjects of the IP webcam view, the image left uncontested means the civic authorities and proprietors of image technology are the true purveyors of the city image. The exploitation of the qualitative properties of pixel arrangement and connectivity rejects the politics of promotion and concealment. The technical disruption of the image tips the balance back towards the viewer without resorting to redemptive messages associated with the branded image or eidetic drawing. Rather, the disruptive image contests the stultifying effects of the urban spectacle, or what Marin (1984, 230) would refer to as, 'the neutralizing work of utopic practice within the representation of the city'. The ensuing co-opting of the digital image opens up a new type of space between sign and signified. In the process, intervening in the material and immaterial systems of the city asks architecture and urbanism to redraw its own disciplinary boundaries.

BIBLIOGRAPHY

Cantoni, Virginio. 2011. *3C Vision: Cues, Contexts, and Channels*: Elsevier, London; Waltham, MA.

Corner, James. 1999. Eidetic Operations and New Landscapes In *Recovering landscape : essays in contemporary landscape architecture*, edited by J. Corner. New York: Princeton Architectural Press.

Evans, Robin. 1997. Translations from Drawing to Building. In *Translations from Drawing to Building and Other Essays, AA Documents*. London: Architectural Association.

Heidegger, Martin. 1977. The question concerning technology, and other essays.

Hollier, Denis. 1989. *Against Architecture: The Writings of Georges Bataille*. Cambridge, Mass: MIT Press.

Kittler, Friedrich A. 1996. The City Is a Medium. *New Literary History* (4), http://www.jstor.org/stable/20057387.

Klette, R. , and A. Rosenfeld. 2004. *Digital Geometry: Geometric Methods for Digital Picture Analysis*: Elsevier, Amsterdam, Boston.

Klingmann, Anna. 2007. *Brandscapes : architecture in the experience economy*. Cambridge, Mass.: MIT Press.

Lukac, Rastislav and Plataniotis, Konstantinos N. 2005. Color Filter Arrays: Design and Performance Analysis. *IEEE Transactions on Consumer Electronics* 51 (4):1260-1267.

Lyon, Carey. 2002. unreal estate. In *Take 1: Urban Solutions: Propositions For The Future Australian City*, edited by R. McGauran. A.C.T.: Royal Australian Institute of Architects.

Marin, Louis. 1984. *Utopics: Spatial Play*. Translated by R. A. Vollrath, *Contemporary studies in philosophy and the human sciences*. Atlantic Highlands, NJ & London & Basingstoke, UK: Humanities Press Inc & Macmillan Press Ltd.

McLuhan, Marshall. 1995. *Understanding Media: The Extensions of Man*. Cambridge Massachusetts & London England: MIT Press.

Poynton, Charles A. 2012. *Digital video and HD : algorithms and interfaces*. 2nd ed. Waltham, MA: Morgan Kaufmann.