

The Fibreculture Journal

DIGITAL MEDIA + NETWORKS + TRANSDISCIPLINARY CRITIQUE



Issue 20 : Networked Utopias and Speculative Futures

edited by Su Ballard, Zita Joyce & Lizzie Muller.



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About the Fibreculture Journal

The Fibreculture Journal is a peer reviewed international journal, first published in 2003 to explore the issues and ideas of concern to the Fibreculture network.

The Fibreculture Journal now serves wider social formations across the international community of those thinking critically about, and working with, contemporary digital and networked media.

The Fibreculture Journal has an international Editorial Board and Committee.

In 2008, the Fibreculture Journal became a part of the Open Humanities Press , a key initiative in the development of the Open Access journal community.

The journal encourages critical and speculative interventions in the debate and discussions concerning a wide range of topics of interest. These include the social and cultural contexts, philosophy and politics of contemporary media technologies and events, with a special emphasis on the ongoing social, technical and conceptual transitions involved. More specific topics of interest might include:

- :: informational logics and codes
- :: the possibilities of socio-technical invention and sustainability
- :: the transdisciplinary impacts of new media technologies and events in fields such as education, the biosciences, publishing or knowledge management
- :: information and creative industries, media innovation, and their critique
- :: national and international strategies for innovation, research and development
- :: contemporary media arts
- :: new forms of collaborative constitution made possible by contemporary media
- :: software and hardware develops in relation to the social
- :: networks :: media change, convergence and divergence
- :: the use of contemporary media in socio-technical interventions

The Fibreculture Journal encourages submissions that extend research into critical and investigative networked theories, knowledges and practices.

The Fibreculture Journal values academic scholarship in the field, and demonstrates this through the publication of refereed articles. The journal is fully supportive of Open Access communities and practices, and is committed to contemporary metadata provisions and uses. It is also open to expanded notions of scholarship which might include collaborative hypertexts, database compositions, and low-band electronic installations that experiment with the philosophy, politics and culture of information and communication technologies.

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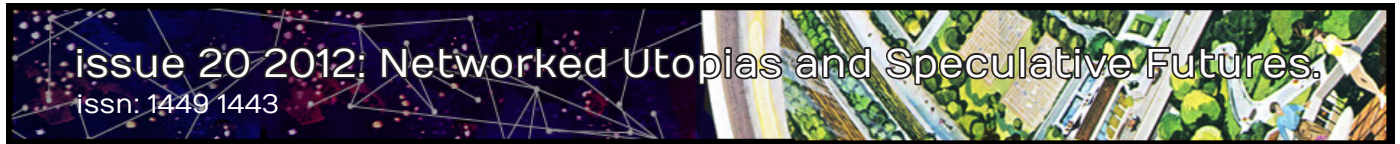
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Editorial Essay

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The future began somewhere. The impulse behind this issue of *The Fibreculture Journal* was a crisis of imagination with regards to how the future might look and behave. Our starting point was the notion of post-millennial tension – the idea that in the decades following the year 2000 we find ourselves living in an era that was meant to be the future, but where many of our futuristic hopes and fantasies remain unfulfilled. Worse, our historical visions of hyper-technological futures seem to have propelled us into a perilous position where humankind may not have any kind of future at all. In the space between ever-hopeful techno-futurism and the realities of a world forever changed by the pursuit of the resources required to fuel it, we asked if the age-old concept of utopia still has the strength to generate galvanising visions of the future.

Utopia, we contended, was well-worn territory, explored from one magnificent boundary to the other. Traditionally, utopian societies have been portrayed as bordered and isolated in some way from other social structures. Such separation is the pre-condition for a perfect state – a hermetically sealed system existing out of time and place, that cannot be destabilised through encounter or exchange. But the tools of networked cultures and digital media have opened up a different kind of utopian sensibility – less bounded by the notion of a physical territory. The oxymoronic concept of a networked utopia proposes an imaginative space that is interconnected, fluid and dispersed: a space that inhabits the contradiction between two terms, and which can perhaps embrace crisis and withstand, or even thrive on change. Because it holds the potential for connectivities across time, a networked utopia

also creates spaces for multiple nonlinear speculative futures.

Of course, utopian thinking accompanies the emergence of all new knowledge and communication technologies – from the printing press to the telegraph – and it has been a powerful feature of the communities and discourses that have formed around the emergence of the world wide web since the 1990s. The very phrase “networked utopias” risks conjuring a naïve faith in the myth that a new technology will enable another (better) way of being. So much post millennial disappointment comes from the failure of the internet to be a different kind of space, and the replication within networked media of existing, imperfect social, economic and political structures. Contemporary commentary on the internet focuses on its increasing monopolisation by corporations and the restriction and censorship of networked information (both enforced and voluntary), symbolised most effectively by the great firewall of China and the emergence of the “walled garden” of Facebook that codifies the social communication of nearly half the world’s internet users.

Recognising this, our call for papers sought to discover a new range of ways in which the hopes and speculations of networks could be configured. The network, we suggested, could be both technical and interpersonal, a mesh of servers and routers formed from connectivity, participation, creation, and support. It may exist in the physical location of its infrastructure, or in a shared no-place of communication. It could be as much a body as an event. We sought to interrogate the relationship between an idealistic transcendent no-place, and the embodied realities and contingencies of the changing world in which our selves and our technologies are actually located.

Nevertheless, re-reading our call for papers, written in 2010, the utopianism of our own impulse now seems simplistic. Our invitation to other researchers, which we acknowledged as “romantic”, radiates faith in the resilience and flexibility of network technologies, and their value in generating new and compelling ways of envisioning the future. However the large and diverse response to our call opened up a dialogue between the utopian impulse at the heart of the project and the powerfully skeptical and politically engaged thought that surrounds contemporary scholarship at the intersection of new media and the future. We received over fifty submissions from which the current issue of ten essays was formed. The papers that we have published together offer not only an exploration but also a thorough critique of many of the assumptions that were embedded in our original call.

An academic journal is a network, and that network contains the lived experience of all involved. Our utopian thinking has also been challenged by own lived experience during this time. The shifting ground (both literal and metaphorical) of shared and personal perspectives

has provided a background to the speculative future of this issue. Of all these experiences the most public is the earthquake sequence that has rocked Christchurch New Zealand, since September 4 2010, revealing just how tenuous speculations on the future can be. The first earthquake woke me (Zita - this is not a story that can be told in the abstract) four hours after a midnight return home from the Utopia, Dystopia and Catastrophe conference in Melbourne, Australia. At magnitude 7.1, in the countryside to the west, it was a significant quake, but the lack of serious injuries or deaths, and relatively modest damage, imbued the city with a mild euphoria, a sense that we had survived a serious event and emerged stronger, more resilient. It seemed that houses would be fixed, land remediated, and a new and more interesting city could emerge from the disaster. An aftershock directly under the central city on Boxing Day rattled our confidence in the future, but by February the revived city was being discussed with some enthusiasm.

It is hard to overstate the shock of a major earthquake. The one that struck at lunchtime on February 22 2011 was only a 6.3 but very close to the central city and incredibly violent. While September made aspects of the city's future suddenly speculative, February destroyed almost everything we knew, expected, and planned for. Everyone has lost something to the quake and the consequent demolitions and relocations: family, friends, homes, jobs, businesses, belongings, ways of life, certainty. Over a year later entire suburbs have been declared unlivable, and the central city is still cordoned off, inaccessible to residents while nearly every building is demolished. We have rerouted our lives around the edges of 'red zones', while the built environment we knew, lived, worked and grew up in is dismantled piece by piece.

In this increasingly blank slate of a city, everything about the future in Christchurch is speculative. Out of our catastrophe come two concurrent paths: the dystopian empty wasteland, the 'rebuild' held back by insurance companies and funding, by inadequacy, incompetence, weariness, and waiting; and the utopian sense of possibility, the joyful Gap Filler projects that have placed films, painted pianos, a public dancefloor, a book exchange in a fridge, and more, on the concrete pads left by demolished buildings (<http://www.gapfiller.org.nz/>), old businesses revived in new and wonderful ways, and the collective dreams and hopes for a new kind of future.

Towards this new future we use networked tools to speculate together on the shape of our new collective space. The biggest of these is the City Council's 'Share an Idea' process. In the winter of 2011 a series of public events invited residents to develop and share visions for the future of the city, on post it notes, in workshops, and on a website posing weekly questions. The suggestions were incorporated directly into a draft plan for the reinvention of the central city, although the final version is yet to be set out in detail by new government-appointed

bodies. The Council's draft plan is indeed utopic, at least in the current imaginings of urban utopias: a sustainable city, with new parks and greenspaces, community vegetable gardens, cycle ways, better public transport, green roofs, new facilities for arts, sports, and remembering.

Other kinds of networked collective speculation are taking place around community events, online forums, and on Facebook. Groups coalesce around support for hopeful ventures, for planning, reminiscing, and organising. 'The Student Volunteer Army' has become the paradigmatic example of Facebook as community organising tool, along with creative projects like Gap Filler and Greening the Rubble (<http://greeningtherubble.org.nz/wp/>). 'New Christchurch' leads discussion on building plans, 'Christchurch Resilience Reading Resources' prompts us to consider and compare our experiences, 'You know you're from Christchurch When...' eased the months after February with jokes about aftershocks and broken roads. Within the bounds of Facebook and other owned infrastructure, these are not networked utopias in themselves, but they are networked spaces of participation, collaboration and support. With so much of the central and eastern city inaccessible, broken, and empty, these are the spaces where people are able to come together to speculate on a future that has to be more utopian than the present.

As Zita's experiences in Christchurch demonstrate, utopia and speculation can not so easily be separated from the way lives are lived, and in particular from the manner in which network technologies are embedded in these lives. In the moments after the September and February quakes Christchurch was held together and extended into the world by a dense social network of texts and tweets connecting people with news, support and reassurance. The same events, of course demonstrated the vulnerability of the technical networks underpinning the social – overloaded cellular phone systems, broken electricity cables, water pipes, and roads. Networks become more visible as their weaknesses become more apparent, revealing the interdependence of the social and infrastructural, the interface and the substrate layer. This issue of *The Fibreculture Journal* was put together amidst the reverberations of Christchurch and the mesh of networked engagements that emerged, and it is this that continues to remind us that while we have to hold onto critical realities, the network enables a sense of hope and possibility, particularly in times of crisis.

The essays in this issue move between human and technical networks, examining content and what we do with it, and the structures that support activity. Significantly, in a number of essays the network is not treated as a singular preformed structure. Networks are teased open, and shown to be modalities through which dominant power structures are replicated and imposed. Across the uses and structures of the network plays a fundamental tension between the connection that people seem to wish for, and the iterations of power that shape and exploit the interpersonal.

We begin with Rachel O'Dwyer and Linda Doyle's essay "This is not a bit-pipe: A political economy of the substrate network", where they examine the economic relationships shaping the networks on which this issue reflects. O'Dwyer and Doyle draw attention to the infrastructure that supports the production and circulation of content, contextualising the social web resources casually framed as utopian. As this essay demonstrates, the network economic model based on renting out access to a 'dumb pipe' is shifting to a mode of 'cognitive capitalism' in which value is parasitically extracted at multiple levels from the activities of web 2.0 users. For the utopian hopes of the digital commons and open networks, the implications of this moment of transition and network fluidity are yet to be realised. O'Dwyer and Doyle highlight the importance of understanding the mechanisms of the network economy in order to develop a new conceptual framework towards free culture.

Ethnographer of the mobile telecoms future, Laura Watts begins from a confrontation with 5000-year-old technologies that cannot yet imagine their own futures. Her essay, "Sand14: Reconstructing the Future of the Mobile Telecoms Industry", embraces an experimental material-semiotic approach, drawn from Donna Haraway and based in empirical research. Watts takes us on a journey inside a design studio where a new mobile technology is being constructed that will enable users to re-experience and capture memory. This generative ethnography powerfully materialises a speculative future where an apparatus is formed between a cameraphone and the Orkney Islands, and where we are given a glimpse of not only what this future might look like, but also how it will feel.

The electromagnetic thread of the previous two essays is picked up by Nicholas Knouf, in "Radio Feeds, Satellite Feeds, Network Feeds: Subjectivity Across the Straits of Gibraltar". Knouf documents the project *faiadat*, which connected Tarifa, Spain, and Tangier, Morocco via a dedicated WiFi data link and specially developed open source streaming tools. Wresting control over telematic representation on behalf of the people, *faiadat* enabled rich realtime interaction across the border of "Fortress Europe", claiming space between the continents and also between the proprietary electromagnetic infrastructures analysed by O'Dwyer and Doyle. Knouf contextualises the *faiadat* network feed in Guattari's interpretation of Italian free radio, and the slippages of satellite transmission feeds caught by Brian Springer's 1995 documentary *Spin*. Like these, Knouf argues, *faiadat* represents a point of resistance to the corporatisation of network infrastructure.

Throughout the 20th century (and arguably throughout history) we have turned to artists and designers to find new ways of imagining the future. We have included two essays in this issue that investigate the role of art and design practice in creating speculative

and alternative images. These two counter each other interestingly: Dan Frodsham offers an optimistic (and in his own words “speculative” and “rhetorical”) bid to “rehabilitate utopianism” through the “Utopic Spatial Practice” of artists working with locative media, whilst Carl DiSalvo offers a more critical and skeptical study of the limits of speculative design in creating genuine opportunities for reflection, or actual possibility of change.

In “Spaces for Play - Architectures of Wisdom: Towards a Utopic Spatial Practice”, Dan Frodsham examines utopia as a specifically spatial phenomenon. He argues that artists, designers and architects can use locative technologies to construct alternative spaces (“space as it might be”) within “space as it is”. Rather than creating a seamless integration of real and virtual – as is often the assumed ambition of “hybrid” realities – Frodsham suggests that the projects of a utopic spatial practice would intentionally create, and emphasise, a confrontation between different realities. In this way they would realise Louis Marin’s reading of the radical potential of utopia: to produce a critical discourse that ‘wedges itself in between reality and its other’.

In his essay “Spectacles and Tropes: Speculative Design and Contemporary Food Cultures” Carl DiSalvo investigates the power of two designerly strategies – spectacles and tropes – to surprise audiences and provoke reaction. Whilst acknowledging the potential of these spectacular forms of image making, he traces their limits in supporting deep reflection, or converting reaction into action. DiSalvo emphasises the way in which design – even speculative design – reproduces as well as invents culture, and asks the question: ‘If design reproduces culture, what politics are being reproduced in speculative design?’

The theme of grounded practice returns in a very different way in Nathalie Casemajor Loustau and Heather Davis’ discussion of their project – “Ouvert/ Open: Common Utopias”. Expanding out from a particular and local phenomenon of urban life in Montréal, where desire lines record collective disobedience and where train tracks hinder rather than enable movement, they show how the everyday activities of citizens can transform environments. They also raise a crucial question for this issue. Where are the limits of the commons? And at what point do the commons intersect with a utopian demand for alternative organisational activities? By folding together online and offline community networks Casemajor Loustau and Davis ran the risk of making illegal (or at the least clandestine) activities visible. This enacted politics is played out in the fields of Facebook and on the ground itself. Casemajor Loustau and Davis explore the different ways through which community might adhere – social, communal, local, and spatial. They show how a network might be a railway line, but also the individuals attempting to negotiate the crossing of that line.

Designers and artists are not unique in speculating on new ways of life and being, of course. In "Healthymagination: Anticipating Health of our Future Selves", Marina Levina explores the utopian speculations of "Health 2.0", and the harnessing of participatory discourse for tracking, reporting and sharing health data. A healthy, happy, self is produced by rigorous attention to our own "numbers", and exchanging our health stories online. Levina argues that the future subject is produced by today's "risk subject", doing work in the present to limit the risk of an unhealthy future, collaborating, participating, and sharing with other good network citizens. It is enabled by General Electric's Healthymagination initiative, and companies with names like CureTogether, HealthTap, and Quantified Self. Health 2.0 is the perfect beginning point for a speculative disease-free future, a utopia dependent on network infrastructure and benevolent corporate data management.

Alongside the production and speculation surrounding possible futures needs to be a critical engagement with the assumptions of time and space historically embedded in both utopia and the network. In "Temporal Utopianism and Global Information Networks", Andrew White provokes with a series of questions that ask 'why bother with utopianism as a political project?' White demonstrates that there may still be some worth in speculation, particularly when connected to the potentially effective capacity of networks to galvanise communities. In suggesting that there remains validity in thinking outside of the here and now, White carefully reviews the history of utopian thought demonstrating the conflation of spatial and temporal metaphors. In particular he critiques the equation of networks with space and openness, and suggests that we need to recognise first the elite position accorded those who inhabit networks, and secondly the abilities of these very same networks to promote reform.

Since we released the call for this issue our understanding of the relationship between networked technologies and political action has been refocused by the upheavals of the Arab Spring. We have selected two essays for publication that deal with these very recent (still unfolding) events. Both essays rigorously unpick the utopian rhetoric that surrounds social media and its revolutionary capacity. In "Mannheim's Paradox: Ideology, Utopia, Media Technologies, and the Arab Spring", Rowan Wilken offers a close investigation of the relationship between utopia and ideology, and in particular the vexed question of utopian "realisibility", or the power of utopian thinking to bring about change. Focusing on the role of media technologies on the uprising in Egypt, Wilken contextualises recent events within the broader historical Egyptian media landscape. He argues that media technologies were 'mobilised simultaneously in support for the will for stasis (ideology) and the will for change (the utopian urge)'. His analysis reveals the way in which utopia can be mobilised as a powerful tool for critiquing societal structures and the technologies and technological discourses that shape them.

Ulises Mejias presents a critique of the western liberal discourse of “liberation technologies”. In his essay “Liberation Technology and the Arab Spring: From Utopia to Atopia and Beyond”, Mejias argues that its utopianism prevents discussion of the inequalities of the market structure of digital information and communication technologies. Mejias’ concept of “nodocentrism” offers a term for the way in which the pervasive, privatized and market driven logic of the network renders invisible anything that is not a “node”. He argues that the technologies of search engines, social networking and media sharing facilities create inequality at the same time as they increase participation – through the commodification of social labour, the privatisation of social spaces and the surveillance of dissenters. His skeptical view calls for us to ‘question our investment in corporate technologies as the agents of liberation’. Together Wilken and Mejias offer a compelling corrective to the utopian tendency that characterises much wishful thinking about networked technologies. Their essays bring to the fore the difference between abstracted dreams of networked collaboration and the realities of political action or practice on the ground.

This issue of *The Fibreculture Journal* has brought together studies in networked communities with novel, historical and creative approaches to utopia in order to examine the productivity of future-thinking from our present location. Reading through the essays collected here it becomes clear that framing utopia in the future, endlessly deferring it until a ‘perfect’ world emerges, is a perfect way of never doing anything at all. More immediately, the events of the Arab Spring, the rebuilding of Christchurch, and other examples of activism and community work documented here reframe the future through the present, reminding us that the actions we take today open up new possible futures. Indeed this is the message of the ‘risk subject’ described by Levina, in which the future perfect self is created by the choices of the present. Many of the essays published in this issue interrogate the relationships between hopeful imagining and action. In looking for utopia they acknowledge the value of hope, but recognise that ‘networks’ need to be active sites of engagement, critique, and risk, not simply an abstract idea, or ideal. The network alone will not get us there. As a whole this issue exposes and critiques the casually utopian use of the network as a synonym for open, free, egalitarian and participatory. In retaining the paradox at the heart of the term “networked utopias” we have opened up a dynamic, messy, imperfect arena of hopeful action and collective speculation.

Biographical Note

Dr. Susan (Su) Ballard is a writer and curator from New Zealand. Su’s research covers a divergent cluster of thought including systems aesthetics, noise, machines, accidents, error, and the encounter between art history, new media and the art gallery. She is currently

working on a curatorial project for the Dunedin Public Art Gallery that examines Erewhon and the antipodes as elsewhere spaces. Recent book chapters include a discussion of New Zealand artists collective et al. in *Error: Glitch, Noise and Jam in New Media Cultures* (Nunes, Continuum, 2010), and a reflection on contemporary understandings of frequency and the sublime in *Far Field: Digital Culture, Climate Change, and the Poles* (Polli and Marsching, Intellect Books, 2011). Su is a director of The Aotearoa Digital Arts Network, and co-edited *The Aotearoa Digital Arts Reader* published by Clouds in 2008. (<http://www.ada.net.nz>). Su is a Senior Lecturer in Art History at the University of Wollongong, Australia.

Dr. Zita Joyce is a Lecturer in Media and Communication at the University of Canterbury, Christchurch, New Zealand. Zita's research revolves around broadcast radio and other media technologies. She is currently preoccupied with the media and networked implications of the ongoing Christchurch earthquakes: the effects of the earthquakes on the infrastructure and audiences of independent radio stations; the post-quake role of social networking tools; and, with a view towards the eventual new city, the role of media art in urban space. Recent book chapters include an overview of broadcast radio in New Zealand for the textbook *Media Studies in Aotearoa New Zealand 2* (Goode and Zuberi, Pearson, 2010), and a reimagining of the career of New Zealand artist Sean Kerr as a videogame walkthrough in *Sean Kerr: Bruce is in the garden; so someone is in the garden* (Kerr, Clouds, 2010). *City Loops* in the forthcoming book *Erewhon Calling: Experimental Sound in New Zealand* (Russell, 2012) documents 'Trambience', a series of sound art events Zita organised with Adam Willetts on the historic tourist tram that used to travel around central Christchurch. Zita is chair of the Aotearoa Digital Arts Network, and a member of the Audio Foundation trust board.

Dr. Lizzie Muller is a curator and writer specialising in media art, interaction, audience experience and interdisciplinary collaboration. Her research interests include experiential curating, curatorial practice based research, the role of experience in the documentation of media art, speculation in art and design and the relationship between art, technology and change. She is Head of Interdisciplinary Design in the Design School at the University of Technology, Sydney. Recent curatorial projects include *Awfully Wonderful: Science Fiction in Contemporary Art* (<http://www.performancespace.com.au/2011/awfully-wonderful-science-fiction-in-contemporary-art/>) curated with Bec Dean at Sydney's Performance Space (April/ May 2011), *The Art of Participatory Design* (<http://www.pdc2010.org/art-of-pd/>) with Lian Loke, a programme of creative research projects that accompanied the 2010 International Conference of Participatory Design for which she was Art Chair. In 2008 she co-curated *Mirror States* (<http://www.mirrorstates.com/>) a major exhibition of interactive installations, with Kathy Cleland (Campbelltown Art Gallery, Sydney and MIC Toi Rerehiko, Auckland). Recent book chapters include "Learning From Experience: A Reflective Curatorial Practice" in *Interacting: Art, Research and the Creative Practitioner* (Candy and Edmonds, Libri Publishing, 2011).

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FCJ-138 This is not a Bit-Pipe : A Political Economy of the Substrate Network.

Rachel O'Dwyer and Linda Doyle
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Introduction

In *The New Socialism: Global Collectivist Society is Coming Online*, editor of *Wired* magazine Kevin Kelly (2009) argues that the collaborative cultures emerging around web 2.0 platforms cultivate a “digital socialism”, with broad political and economic implications for the producers of online culture. Kelly, alongside others, sees the digital commons as an arena for non-market collectivism that has the potential to extend influence to material circuits of production. Tracing a smooth trajectory from the publication of More’s *Utopia* in 1516, through to the monopoly of YouTube at the time of publication, Kelly defines the core tenets of a networked utopia. This is premised on a decentralised architecture with the potential to scale the collective production of information, knowledge and culture, where open source software replaces communal tools and the ‘desktop factory’ succeeds the collective farm as the core space of common production. Applying the economic framework of socialism to online collaboration, Kelly’s article is a classic symbol of the techno-ideology that surrounds the digital commons, a sign that the effusive rhetoric of the ‘networked information economy’ (Benkler, 2006) is alive and well in the public consciousness and has yet to reach its conclusion in the crisis of capital. This reflects this paper’s core criticism of the ideology of free culture, specifically that its notion of “free” pays lip service to an imperial credo aligned more closely to the social factory than to the necessary apparatuses of an idealised peer-to-peer economy, rolling out a vista from Utopia to YouTube that wilfully glosses the conflicts inherent in immaterial labour (Lazzarato, 2005). [1] These conflicts concern the antagonisms between an informational space that circulates non-proprietary culture, and the very proprietary systems that constrain the digital commons. Too often, to paraphrase Galloway (2007), the modes of constraint operating through such a system are material, while liberation is semiotic. If Kelly’s article demonstrates anything, therefore,

it is not the coming triumph of digital socialism, or the primacy of open source as a universal political model. Rather, it is always possible, and from the perspective of cognitive capitalism, profitable, to trade in the rhetoric of networked utopia, and in speaking, to obfuscate the really dominant mechanics embedded in the substrate of the digital commons, a power, as Hardt and Negri maintain (2009), embodied in property and fully supported by the law.

While Information and Communications Technology (ICT) is the spectre that haunts both utopian and critical accounts of the network economy, its physical concatenations are again and again rendered immaterial. The result is an ideology of free culture that champions decentralisation over all other considerations of the politics of network architecture, and a critical theory of immaterial production grounded in the labouring subject (Poster, 2005). Both perspectives elide a full consideration of the complex exchanges occurring between immaterial and material spheres of production. Networks are not only 'metaphorical tropes' (Galloway, 2004, p. xiii) for fluid forms of sociality, governance or commerce. To overlook the physicality of the network is to trade in a Church-Turing confidence in abstraction - the ascendancy of language, code and software over the material domain. [2] The digital commons is grounded in such materially entrenched sites of production. If the ideology of free culture is to progress beyond a pipe-dream, this project requires an active engagement with the politics of the substrate network.

The "network" of which we speak is comprised of contingent logical and physical strata: applications and content; the higher level protocols and services implemented in software, and the lower substrate network or "physical layer", comprising physical hardware such as channels, routers, storage and processing technologies and resources such as spectrum, bandwidth, real estate, man power and energy. Together these form the infrastructure on which content is produced, circulated and extracted. While there is a burgeoning acknowledgement of the politics of software, framing 'protocol' as a biopolitical architecture and locating the possibilities for 'exploit' through software related activism (Galloway, 2004; Galloway and Thacker, 2007), a consideration of the politics of physical media is largely absent from this discussion. More frequently this backbone is presented as the benign foundation on which a political architecture is implemented.

However, recent controversies highlighting the exercise of political sovereignty through communications infrastructure (El Amrani, 2011), and the various environmental, labouring and political conditions driving the information economy are gradually bringing the politics of the physical layer to the fore (Burrows, 2012; Greenpeace, 2012) It is becoming clear that we need a political economy that pays attention to how surplus accumulates at all layers

of the network: from content, through to logical processes, down to the substrate network, where immaterial and material circuits of production converge, and sometimes conflict. [3] This political economy is necessary to identify the modes of surplus extraction channelled through a proprietary network. Through such an analysis the substrate network ceases to be a benign apparatus and becomes instead a focal point at which the expropriation of the commons is not only visible, but increasingly precarious. The machinic underbelly of the network represents the limit point of abstraction, where the digital credo breaks down, and where the conflicts of cognitive capitalism are at their most explicit.

This paper explores the economic transformations to ICT business models, infrastructure and property relations emerging in tandem with an economy that places increasing emphasis on the circulation of user-generated content. Applying the newly invigorated theories of 'rent' to the shifting commons/property dialectics of the network economy (Harvey, 2001; Negri and Vercellone, 2007; Pasquinelli, 2008), we explore how various proprietary mechanisms facilitate the extraction of cognitive surplus. We then focus our attention on structural antagonisms emerging between competing modalities of rent and profit: where immaterial labour and tangible architectures intersect, diverge, and sometimes conflict. The diverse forms of surplus extraction across network layers are not always complementary, representative of a crisis of capital in which negotiations between fluid surplus and economic strictures threaten the consolidation of power in the substrate network. Political and economic control of infrastructure is changing as a result.

This paper provides a broad overview of the shifting terrain of physical media and as a consequence may seem to smooth many of the social and geographical particularities of information and communications technology in favour of overarching concerns: How is surplus from immaterial production channelled through a material substrate? What are the points of conflict and/or mutual enforcement between surplus extracted from infrastructure and surplus from cognitive capital? How are communications networks transforming in response to the fluid and fluctuating dynamics of the network economy? Finally, how might these transformations suggest opportunities for tactical engagement at the level of network infrastructure?

The Digital Commons

With the emergence of web 2.0 platforms that emphasise commons-based peer production and content-centric architectures, "free culture" emerges as a counter-capitalist ideology. This economic credo progresses and advances alongside the work of a new generation

of network culturists and has many advocates in both the core apparatuses of power and communities of digital activism (Pasquinelli, 2008). [4] Leveraging the flexibility of virtual commodities to cost free reproduction and distribution, these advocates present collaborative culture as a digitised gift economy (Barbrook, 1997, 1998) in which participants trade in social capital, self realisation, and various forms of non-market exchange. Advocates argue that the technological affordances of ICT networks facilitate the emergence of a non-proprietary information economy. These affordances include a consumer electronics culture that places the means of immaterial production in the hands of a majority, the primacy of distributed topologies and non-discriminatory protocols over traditional centralised communications, and a consequential shift from the audience as passive consumer, towards the ambiguous subjectivity of the 'producer' (Bruns, 2005) as an active agent in collaborative culture. Situated at the core of a global economy that places increasing importance on the circulation of knowledge, images and affects, network culture is thought to emerge in a favourable position to transform the surplus economy of material production. The pervasiveness of open source communities, user-generated content, DIY cultures and the peer-to-peer trafficking of rich media content over networks driven primarily by an economy of social capital, suggest for some a networked space emerging as a counterforce to capitalist accumulation (Lessig, 2004; Bruns, 2005; Benkler, 2006; Varnelis et al., 2008; Kelly, 2009). In such a framework, the digital commons is traditionally presented as a space unfettered by the constraints and exploitations that govern material production, conversely capable of exerting material influence through the economic centrality of immaterial production and the growing conflation of "real" and "virtual" spaces wrought by pervasive media.

In emphasising the primacy of immaterial culture, the utopian advocates of the digital commons gloss over its necessary symbiosis with, and subsumption into material capital, as a virtual space grounded in a proprietary and market-based economy. The digital commons is not external, but central to the mechanics of a capitalist regime that seeks new forms of valorisation for the owners of the Internet's core resources and infrastructure. A growing political vocabulary including "post-Fordism", the "communism of capital", "cognitive capitalism", "immaterial labour" and "biopolitical production" address these shifting relations between labour, property and capital at play in the digital commons. From the vantage of such criticism, the "network" ceases as a trope for counter-economic or autonomist culture and becomes an exemplar of corporate philosophy made visible through the recomposition of labour-capital relations around the social and technological labour of online communities. This marks a shift away from the labour-wage relations of the industrial economy, towards pervasive and precarious models of labour and a variety of automated apparatuses for the extraction of surplus (Virno, 2004, Marazzi, 2010). Similarly, it embodies transformations to the composition of productive capital towards a parasitic extraction of rent over common resources that were previously cast as external to the market. In the

network economy exemplified by web 2.0, value resides, therefore, not only in the exchange-value of communication resources and services, but in their extension through a common space of cognitive production. This includes immaterial surplus voluntarily produced on social networks, open platforms and cloud architectures and through the sifting, adjudication and dissemination of data by an underlying assemblage of decision engines, algorithms and network hyperlinks. These modes of immaterial surplus are channelled generously through a proprietary infrastructure. Indeed, it is largely through the exclusive control of such network resources that a profitable position can be established external to commons-based peer-production. We can therefore understand the idealised peer-to-peer economy as a gesture that is always subsumed before its politico-economic potential can be realised. Where innovations towards non-market and non-proprietary media practices possess the nascent potential to support an economy of free culture, these practices are subject to commercial constraints, the mechanisms of which can only be grasped through an engagement with all layers of the network. [5]

As an example we might consider the case of mobile and wireless networks. As computing migrates from the traditional desktop model, becoming nested in everyday contexts through mobile and increasingly pervasive networks, the advocates of free culture see these economies in turn progressing beyond a virtual domain, into 'hybrid space' (Kluitenberg et al., 2007) rendering the off-line world as a sort of 'Google-like utopia of universal digitisation' (Pasquinelli, 2008: 72). A number of recent wireless innovations including community Wi-Fi, mesh-networking initiatives, and forms of mobile peer-to-peer are lauded for their social and juridical implications. These include mobile citizenship, locative media cultures and various forms of pair-wise social exchange. A closer analysis of these mobile networks, however, quickly reveals the circulation of new forms of information capitalism, in which everyday networked activities produce surplus for the owners of the network's core infrastructure. These commodities include a whole range of user-generated content both consciously and unconsciously produced through demographic, psychographic, geographic, relational and even biometric data. This valuable data is used in turn to enhance, rationalise and personalise location-based marketing and advertising. The possibilities for such modes of extraction are dictated at every point by the material substrate of the network. Extraction takes place through proprietary terminal devices, network upload points and intelligent algorithms operating through applications, services and platforms. If a degree of openness is available at one level, the possibility of a mobile commons is still obstructed by various configurations of licensed spectrum, proprietary terminal devices and handsets, communication protocols, operating systems and core, backhaul and radio access infrastructure.

A Political Economy of the Substrate Network

An analysis of cognitive capitalism suggests that surplus extraction is negotiated laterally through a network oscillating between commons and proprietary apparatuses. Any engagement with the political economy of network cultures, therefore, requires an acknowledgement of the affordances and constraints operating across all layers of the network. Furthermore, it calls for a theoretical framework that teases out the antagonisms between various mechanisms, at turns proprietary and non-proprietary, immaterial and material. Such an analysis requires theoretical and political tools largely absent from the discourses of both advocates and critics of the digital commons. [6]

Beyond the merging of "virtual" and "real" domains through pervasive computing, there is no clear program for how a peer-to-peer economy might scale and advance beyond the confines of a virtual domain, uncoupling its circuits of production and exchange from the proprietary interests that underscore the substrate network. The technological infrastructure that sustains non-market exchange is absent in so far as it figures as a costly and complex assemblage of finite resources. Instead the digital gift economy is often framed as a universal political model. When open hardware and commons physical infrastructure are addressed, the irreconcilable nature of non-renewable and static resources to an ideology based on renewable and freely reproducible commodities is downplayed; immaterial and material products are conflated, and the proposal for a network 'free at all layers' (Benkler, 2006) follows a directive comparable to those emerging around the peer production of knowledge and culture.

These principles do not translate to the substrate network. In contrast to the widely lauded possibilities of free distribution of source code and APIs, material resources operate under different property relations. These resources continue to face tangible constraints to their ownership, scale and distribution. This concerns not only the physical injection of capital required to implement and scale a communal substrate, it is also subject to the impressive political constraints structuring the ownership and distribution of requisite real estate, electromagnetic spectrum, satellite technology, servers, bandwidth and energy. Despite the widely celebrated properties of decentralisation and non-discriminatory protocols, the network is substantiated in monopoly or oligopoly ownership, and a logic of scale and scarcity that prohibits access to all but the most powerful actors. As Galloway asserts 'ultimately the entire bundle (a primary object encapsulated within each successive protocol) is transported according to the rules of the only 'privileged' protocol, that of the physical media itself (fibre-optic cables, telephone lines, air waves etc.)' (Galloway, 2004:11).

Take, as one example, control of the electromagnetic radio spectrum. Spectrum provides the necessary frequency channels through which wireless signals propagate. Ownership has long been central to the valorisation of mobile and wireless networks, and continues to grow in economic importance alongside next generation IP networks such as 4G, LTE and LTE Advanced. This value is reflected in the exorbitant prices currently paid at auction for desirable frequency bands (Thomas, 2012). With the advent of radio transmissions at the turn of the twentieth century, spectrum was initially governed as a common resource and any party was free to broadcast. However, subsequent issues surrounding the management of interference lead to the gradual privatisation of the airwaves, first through state control and gradually through progressive deregulation, as desire for wireless bandwidth ceded to market forces. Today, access to electromagnetic spectrum is consolidated in a manner that favours exclusive usage rights by a few powerful incumbents. Licenses, granted by a national radio authority or federal commission, currently regulate the frequency at which a licence holder can transmit, the maximum signal strength permitted as an index of wave propagation, the geographic region over which the licence applies and the designated service provided by an operator. Spectrum licences, in turn, are traditionally partitioned to comprise not only discrete frequency channels or bands, but large geographic territories that bound regions or entire countries in some instances. As a result of such restrictions, the majority of spectrum is owned and controlled by powerful incumbents: commercial entities such as large scale mobile operators who can afford to pay for it, and privileged state controlled entities such as the military and public broadcasters.

Recently, the exponential demand for electromagnetic bandwidth, coupled with growing criticism of exclusive licensing, has fuelled debate about the possibility of dynamic spectrum access as a form of management. Dynamic spectrum access techniques pose a policy shift away from exclusive licensing of frequency bands towards a fluid negotiation of spectrum as a communal resource. While the scope of these transformations is beyond this particular paper, a range of regulations continue to frustrate the development of dynamic spectrum access networks, despite the ready availability of these techniques (Marcus, 2010).

Finally, a small amount of unlicensed or commons spectrum such as the 2.4 GHz band does exist, and has given rise to innovations such as Wi-Fi. However, this resource is still subject to both physical and policy limitations that restrict the scale of potentially "open" networks. Not only are unlicensed frequency bands a scarce commodity, in order to manage interference between multiple devices all transmitting within a small frequency range, commons bands are carefully governed by power-transmit rules that constrain wave propagation to within a limited radius. Consequentially, any network infrastructure that intends to provide coverage over a wide area requires access to spectrum that is licensed and auctioned on a scale that suits powerful commercial entities.

Spectrum policy is broadly emblematic of the prohibitions operating over substrate infrastructure. While “openness” and “sharing” as modalities of economic production are the watchwords of corporate web 2.0, this ethos rarely extends beyond the application layer. The physical layer, by contrast, consolidates the right to extract value from free culture, and continues to be associated with the rigid property rights of the Fordist economy. Such “choke points” are by no means exclusive to the physical layer. However, it is easier to exercise political and economic control over material and non-renewable entities than it is to implement strictures over the fluctuating and reproducible surplus of the digital commons. Google for example, a company whose revenue revolves around the attention economy, has multiplied its investment in infrastructures, from server farms and high speed networks, to energy (Fehrenbacher, 2010). Network surplus appears to operate through such contradictions, oscillating between a strategic access that favours audience circulation coupled with the exercise of economic barriers over communicative capacities through IP, digital rights management and other proprietary architectures.

The Becoming-Rent of Profit

The expropriation of the digital commons is not a smooth transaction, but constantly on the verge of crisis through antagonisms between the conflicting modalities of freely reproducible and finite resources, reflective of a lower level contradistinction between property and the commons. [11] This dialectic is characterised by what Post-Operaismo theorists define as the “becoming-rent of profit” (Negri and Vercellone, 2007). This provides a schema from which to advance a political economy of the substrate network.

Cognitive capitalism is characterised by the return and proliferation of forms of rent. Taking Napoleoni’s definition, rent is the revenue procured through the exclusive ownership of some resource, such as land, where value is contingent on its availability with respect to demand (Vercellone, 2010). Until recently, rent was understood as a precapitalist legacy in which the rentier is cast as external to the production of value. This is in opposition to the tenets of productive capitalism, where the generation of profit is thought to require some direct intervention in the production process. Surplus accumulation is today characterised by a shift from productive capital to the growing conflation of rent and profit. Breaking down the Marxist distinctions between “rent” as value extracted through the exploitation of a static resource and “profit” defined as surplus accumulated through the production of mobile goods and services, the becoming-rent of profit sketches the fluctuating metrics of value emerging at the centre of a post-Fordist economy. Rent and profit become diffuse. In the current economy, the rent in question is not only an absolute rent applied to static property such as land or infrastructure, and profit does not refer exclusively to the active production of

material surplus. Instead, the vast majority of surplus in the digital domain is produced from the diffusion of cognitive capital through a proprietary apparatus external to production. David Harvey has described this process from the perspective of urban gentrification, whereby local cultural injections are leveraged against the financialisation of ground rent, escalating its real estate value (2001). Harvey's account is a description of how immaterial surplus, in the form of knowledge, social relations, images and affects are channelled through a material engine, producing surplus value for the owners of the metropolis. Value is grounded in a commons that is situated at the heart of a proprietary apparatus.

This model of surplus has particular resonances for information capital. Where Harvey's example concerns the role of real estate in the extraction of cultural symbolic capital, the credit title or exclusive ownership of an apparatus such as an algorithm, platform, server or communication channel is what enables the extraction of surplus from the digital commons. New forms of rent are increasingly generated from this property/commons dialectic, such as the rent of ICT companies over variable bandwidth, or the rent applied over the attention economy in web advertising (Pasquinelli, 2008: 96).

This is a highly complex and often conflictive process. Information exists not only as symbolic or cultural capital, but as an energetic quantity in the network. This produces a variety of different opportunities for the extraction of surplus from information, including both the content of a transmission and the infrastructure that makes such transmissions possible. A number of different commercial actors dominate the network space, therefore, including incumbent operators, internet service providers, network and consumer electronics vendors, software vendors, online software providers and content providers. These correspond to different revenue models and different confluences of material and immaterial surplus. A traditional system of accumulation over network infrastructure, for example, involves revenue extracted through a relatively static monopoly on the physical layer. The rent in question returns a differential that corresponds to capital invested in bandwidth and/or the inherent value of physical locations and local labour forces. Immaterial surplus figures in this economy insofar as it affects the supply and demand of communications resources such as spectrum.

More and more this relatively static form of rent over infrastructure is supplemented by systems incorporating the spatiotemporal vectors of what Pasquinelli refers to as "cognitive rent" (2008) into their value chain. Cognitive rent is surplus extracted from immaterial goods largely held and produced in common and is by nature more dynamic. In the becoming-rent of profit we can identify parasitic forms of surplus extraction that leverage or dynamically route around fixed property, establishing micromonopolies on fragile spaces. Value in the network progresses beyond "Infrastructure as a Service" (IaaS) towards the value of

productive spaces emerging across a wide range of intermediary platforms, social networks and mashup architectures. We witness this form of rent at play in the business model of a company such as Facebook, whose primary revenue is produced neither from the exclusive ownership of content, nor even the exclusive ownership of infrastructure, but through the parasitic extraction of value above and below these. In "Platform as a Service" (PaaS) or "Software as a Service" (SaaS), the productive capacity of immaterial surplus is channelled through proprietary resources held by internet service providers.

These new forms of rent are still dependent on material commodities, as substrate infrastructure at a physical layer or media content circulating at the application layer. We can identify in the becoming-rent of profit, therefore, a whole set of antagonisms between complementary and competing entities. This is a non-linear system. It traces a metastable economy that constantly negotiates the frictions between property versus the commons, immaterial versus material, in a cycle that threatens to exceed or undo the valorisation process. Hardt has described previous antagonisms in industrial capitalism between the model of the rentier and productive capitalism, in which the rent extracted from static commodities such as land competed with the mobility of commodities produced through labour, or between surplus produced through "rent" and "profit" (2010). If rent and profit are increasingly diffuse, Hardt, alongside theorists such as Vercellone (2010), locates similar antagonisms occurring between immaterial commodities - whose market flexibility elides strict proprietary logic - and the material resources that drive and expropriate the commons, subject to a logic of scarcity and costly reproduction. Such conditions have always existed, but are dramatically intensified through information capitalism. This in turn has implications for the organisation of proprietary infrastructure.

The expropriation of the digital commons always threatens to exhaust productivity, and similarly, the new modes of surplus extraction threaten the organisation of physical property. Often, the necessity of economic barriers that consolidate and exercise property rights are at odds with the growing centrality of the commons to information capitalism. These implications have already manifested for the owners of digital content, such as the media and entertainment industries, who are forced to radically alter their business models in response to the fluid and fluctuating metrics of the digital economy. But these conditions are prescient for the owners of network media also. While cognitive capitalism is progressively dependent on the exponential growth and availability of communications resources, it challenges the traditional owners of ICTs to extract a significant return from their investment in core infrastructure.

Transformations to Physical Infrastructure

In February 2010, The Economist reported that network traffic is exceeding the storage, computing and transmission capacities of available wireline infrastructure. Similar crises have been identified in the wireless sector, where exclusive usage licences over electromagnetic bandwidth are thought to precipitate an imminent “spectrum crunch”, estimated to occur in late 2013 (Goldman, 2012). Here the subcutaneous workings of the digital commons are visible in the excesses of energy, capacity, labour and real estate required to support an information economy, manifested as pressure exerted by the circulation of digital content on a physical layer largely owned and maintained by ISPs. [7] In the new forms of rent underpinning cognitive capital, proprietary architectures are still essential to the digital commons. The monetisation of immaterial surplus depends on its extraction through techniques that rely heavily on material resources such as servers, storage facilities and large-scale processing capabilities. Any traffic in user-generated content, therefore, depends on the availability and development of high-speed quality infrastructure, manifesting where immaterial surplus exerts physical resources, operating over finite reserves of energy and physical space. However, as the requirement for a pervasive backbone grows exponentially with digital distribution, its value as a static resource is decreasing.

With the initial advance of the internet into a global marketplace in the 1990s, telecommunications providers were more than happy to provide the foundations for the World Wide Web. For these companies, additional revenues could be procured through legacy infrastructure without the need for significant additional investment (Leinwald, 2007). A service provider leveraged an existing monopoly over communications and a demonstrated ability to implement and scale a network in order to extract new forms of revenue. This value chain revolved around a traditional average revenue per user (ARPU) or pay-per-use model redolent of a flat rent on real estate. Following the Dot Com crash and the subsequent growth of web 2.0 ideologies, however, economic rationale shifted away from an emphasis on communications towards an emphasis on informational content (Dawson, 2011). The exponential growth of online traffic, both wireline and mobile, mean that network providers are now rolling out the next generation of networks to meet the demands of the modern internet (Alberti, 2010). These networks come at enormous cost. As the internet has scaled and pervaded everyday space, its ubiquity has fuelled an upward spiral of applications and services that require increasingly intensive use of its capabilities, a model that challenges incumbents to make any significant exploitation of their ownership (Allen, 2008). This presents as a demand for communications that is not economically justifiable through rent on infrastructure alone.

This structural contradiction is leading to a variety of significant innovations that challenge the normative distribution and deployment of traditionally monolithic resources. As infrastructure is imbued with cultural symbolic value (Harvey, 2001), the traditional property rights that structure the physical layer are in flux (Forde et al., 2011). In many cases we witness a transfer of power from operators with a legacy in telecommunications towards new actors consolidated in software and managed device platforms. As traditional operators struggle to adapt to cognitive capitalism, other powerful actors are multiplying their investment in infrastructure. Many of these have a legacy in software and content. Google, as previously discussed, has recently invested in network infrastructure including satellite, wireline and electromagnetic channels, cloud infrastructure, large scale ICT4D and even energy provision, becoming a registered electricity provider in 2010 (Fehrenbacher, 2010). Amazon too, with a legacy in content distribution, has recently emerged as a network provider, with services not only through their managed device platform, but through a range of cloud and hosting services such as EC2. These shifts imply new forms of management, new revenue models and new consolidation of network media. Specifically, such transformations sketch a transfer of control of infrastructure from traditional incumbents with a legacy in telecommunications towards software vendors and online software providers looking to consolidate their market position through investment in upstream traffic. In order to participate in this space, traditional Telco providers need to drastically reconfigure their industrial model towards the dynamic modes of appropriation redolent of cognitive capitalism.

This figures a growing emphasis in telecommunications on the importance and significance of services that expand technological rent over infrastructure towards increasingly dynamic modes of surplus extraction (Gardner, 2008; Slatnick, Parkins and Dheap, 2009; Telco 2.0, 2009; Keep, 2010). Traditional operators propose a growth in revenue through the construction of access-tiering, deep packet inspection and the imposition of trusted architectures at the behest of powerful actors such as the state, the media or entertainment industries (Slatnick, Parkins and Dheap, 2009). Another model advances a 'double-sided market' that extracts higher rent from profitable software and content vendors such as Google or Amazon (Kim, 2010). These proposals seek new ways to valorise property, consolidating exclusive ownership of the substrate through an oscillating technological rent over communications resources. Alternatively, network operators look to expand their portal capabilities to incorporate cultural symbolic capital as not only an 'over the top' activity, but as a key component in their value chain. In accordance with the economy of web 2.0, ICT companies in turn recognise the imperative to reorient the marketable internet away from general access and pay-per-use models towards dynamic service provision – a business model less concerned with the provision of hosting services than the permutation of users and valuable metadata (Gardner, 2008; Slatnick, Parkins and Dheap, 2009; Telco 2.0, 2009; Kelp, 2010).

The emerging importance of models such as “Cloud Computing” or “Managed Device Platforms” are key examples of this shift from static infrastructure towards dynamic and reconfigurable services. Network service provision shifts from an economic model based on the “dumb pipe” towards “service provision 2.0” (Leinwald, 2007), expanding beyond Infrastructure towards Software as a Service (SaaS), Platform as a Service (PaaS) and the dynamic extraction of cognitive capital through content produced across these proprietary architectures (Slatnick, Parkins and Dheap, 2009). This expands the operator’s revenue from a static rent applied over basic connectivity and hosting facilities, to the provision of dynamic services for the assembly, storage and aggregation of digital content. We can understand this as a situation in which the traditional vectors of economic rent based primarily on substrate property are replaced by a model that applies cognitive rent over the immaterial surplus extracted through host infrastructure. Information ceases to be a drain on network resources, channelled ‘over the top’ of the substrate network. Instead, it is channelled through the foundations, dynamically leveraging the value of technological real-estate.

Furthermore, the traditional property rights that have long applied to the substrate network are in flux. Infrastructure is becoming fluid, moving away from industrial models towards flexible forms of accumulation. This can be demonstrated across wireline, cellular and wireless networks. In cognitive capitalism, proprietary logic does not necessarily disappear, but it is increasingly subject to the laws of diffusion (Rullani, 2004, Pasquinelli, 2008). If we understand the new forms of rent as a processual negotiation of the antagonisms emerging between immaterial and material surplus, the once highly structured and monolithic substrate network is increasingly fluid. The rigid economies of scale sought under Fordism have been countered by reconfigurable networks, the mobility of communication resources, and a growing centrality of sharing as a modality of economic production. Many of the proprietors of the network are moving towards modular architectures. This is manifested not only across mobile and ad hoc networks. It is also visible in the arrangement of technological elements that rapidly respond, not only to the behaviours of users, but to rapid fluctuations on the vectors of real estate, manual labour and processing power. Possibly the most illustrative example of this can be seen in recent patents for portable data centres, a trend that emerges alongside cloud computing. There is already a precedent for the geographic distribution of customer data storage and processing across multiple physical locations in server farms. Portable data centres extend this diffusion to the architecture itself, presenting a mobile and highly scalable storage infrastructure. Servers housed in arctic containers are circulated in response to wage/labour, energy, real estate, and ecological conditions (Barker, 2007). [8]

Already a key component of the digital commons, sharing as a modality of economic production has also grown in importance at the physical layer, as providers transfer, share, re-use, redistribute and otherwise deploy physical resources as needed (Bennis and Lilleberg,

2007; Agrawal, 2008; Arango and Kaponig, 2009; Wang, 2009; Forde Macaluso and Doyle, 2011). We might take the mobile network as an example: In early cellular networks, the carrier maintained exclusive ownership of all necessary resources, from electromagnetic spectrum through to antennae, base stations and the necessary real estate for their deployment. In emerging networks for 3G, 4G and LTE networks, previously centralised network assets are commonly distributed and owned by a variety of stake-holders (Forde, Macaluso and Doyle, 2011).[9] Architectures are emerging that virtualise the network [10], that support the concept of distributed or multiple points of connection, or that cede centralised control of transmissions from the mobile operator to the end user.

Recognising the importance of sharing of communicative capacity also has significant policy implications (Benkler, 2004). Transformations in electromagnetic spectrum policy provide further evidence of the distributed governance of infrastructure. Traditionally managed through a command and control model that bestows frequency bands to government agencies or large industry agents, the exponential demand for wireless connectivity has led to widespread criticism of the exclusive usage model, previously outlined in this paper. The growing advocacy for unlicensed spectrum has progressed in recent years beyond a core group of commons idealists towards an industrial sector that understands sharing as a viable solution to resource scarcity. Recent technological innovations that propose dynamic spectrum access through cognitive radio or ultra wideband (UWB) transmission techniques are gaining precedence. [11] These technologies have the potential to transform how spectrum is traditionally distributed, challenging the economic barriers that until recently prevented public access to the airwaves.

Conclusion

Earlier in this paper, we noted that access and control of communications presents a point of opposition to open networks. Contrary to the fluid circulation of digital content, the structural ingredients of the physical network are not so easily distributed. Instead, the necessary flexibility of an economy based on commons-based peer production, such as that which characterises the digital network, is at odds with the Fordist models that, until recently, consolidated core infrastructure. This has posed a significant obstacle to collectives hoping to scale a network that is free at all layers.

Today, the technological dispositif is transforming in fundamental ways. It is as yet unclear whether this reorganisation spells a potential dissolution of corporate power or simply its recombination through more flexible channels. From one perspective these changes

depict a network inflected at all layers with the diagram of biopolitical production. They also gesture to a decomposition of monolithic components, as rent destabilises property relations at the level of infrastructure. If a proprietary substrate underpins the expropriation of the digital commons, the current redistribution of property presents opportunities for structural exploit. Critically engaged during a stage of interpretative flexibility, alternative, commons or transient models of ownership might have positive implications for a networked information economy, emerging in a favourable position to disrupt the mechanisms of economic and political control channelled through its foundations.

Fully fleshed prescriptions are beyond the scope of this analysis, which is necessarily diagnostic. We can, however, identify possibilities for further areas of exploration, such as spectrum policy or future cellular networks, that draw on the conceptual framework of this paper.

Dialectical oppositions between licensed and unlicensed spectrum regimes have been discussed throughout this paper. Shifts toward dynamic spectrum access have significant implications as a disruptive technique. Cognitive radio - the signal processing and transmission techniques used for intelligent negotiation of available spectrum - presents the opportunity for unlicensed users to access spectrum that is owned by incumbents but substantially unutilised. This suggests a possible shift from inalienable property rights over a wireless channel towards a "spectrum commons", where communicative capacities are distributed and partitioned as needed. Interestingly, the conceptual metaphor of "squatting" is sometimes used to describe the process of dynamic spectrum access, directly engaging the disruptive characteristics of the technique (Doyle, 2009). Dynamic spectrum access and/or an increase in unlicensed spectrum poses a direct sabotage on the rent applied over wireless infrastructure.

Another early possibility concerns the transfer of points of network control to end users. Moving from the centralised topology of traditional cellular networks, technologies such as the femtocell respond to network congestion by implementing miniature base station technologies for domestic use. [12] Users connect to the service provider's cellular network over a personal network connection. Femtocells arguably cede aspects of network control to end users. The economic rationale behind this is controversial, based on the parasitic appropriation of user's personal bandwidth capabilities to improve the range of a proprietary network. At the same time, it suggests a slackening of monopoly control, breaking a solid network into fluid components that might be accessed, shared, redistributed or otherwise modified.

Such proposals are tentative. When we encounter a new fluidity of property, it does not automatically follow that we encounter a diminution of corporate power, or that the consolidation of such power is necessarily "disorganised". Instead physical networks often cede to the diagram of the networked organisation (Rossiter, 2006), as the tensions between monopoly and competition, between centralisation and decentralisation or between commons and property are negotiated in fundamentally new ways. By this we understand, as Harvey does, that capitalism might become ever more tightly woven *through* dispersal, geographic mobility and flexible responses in labour and consumer markets, all accompanied by hefty doses of institutional, product and technological innovation (Harvey, 1987:159). Such flexibility is the operand of post-Fordism. An observation of early innovations suggest that the growing flexibility in material property that threatens the conglomerate is often countered with a stronger enforcement of symbolic and legislative apparatuses. These might take the form of stricter intellectual property regimes, or the enforcement of communications policies and protocols that seek to ensure network surplus does not escape circulation within the capitalist system.

The recent innovations in cognitive radio, for example, have been tempered by highly conservative regulations that seriously constrain unlicensed transmissions. Even though software-defined radios present the possibility for dynamic access to licensed spectrum, proposing a commons infrastructure managed as a public good, a number of early legislations concerning power transmit regulations and questions of "occupancy" continue to limit this access. [13] Femtocells, as discussed, form part of the new wave of components that allow for a scalable architecture, ceding control of core cellular infrastructure to the end-user. At the same time, recent proprietary legislation appears to ensure that these possibilities are suppressed in favour of the interests of powerful corporations. When the user places a call this is sent through the proxy servers of the ISP. The user is billed (again) despite the fact that the connection is facilitated through their own wireless infrastructure. Network carrier AT&T currently occupies a monopoly position in femtocell development in the United States. Recently, independent hardware providers such as Wilson Wireless wished to supply femtocells that are service neutral. The hardware specifications for both technologies are almost identical, but the third-party innovation sabotages the closed circuit necessary for the extraction of rent. As a result, and despite identical hardware specifications, AT&T successfully lobbied the FCC to disallow transmission licences by third party developers (AT&T, 2012).

It should be clear that the tensions between monopoly and competition, between centralisation and decentralisation or between commons and property are negotiated in fundamentally new ways. The material landscape of affordance and constraint are also shifting, and new forms of critical engagement are necessary. We need to be cognisant of the mechanisms through which value is produced within and across all layers of the network.

Not only do we wish to identify the techniques by which cognitive surplus is extracted through proprietary channels, but also to develop a political vocabulary that extends beyond the semiotic, towards the underlying material infrastructure of the network economy. If the ideology of free culture is to progress beyond a pipe dream, this requires an active engagement with such materially entrenched sites of production. This paper is not so much a program for future networked utopia, therefore, as an acknowledgement of the new sites of conflict through which alternative models of activism, policy or critical engineering might emerge. A conceptual framework is the first step in such an analysis.

Biographical Note

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Notes

[1] The term 'Free Culture' can be traced to Lawrence Lessig's eponymous publication (2004). However, we locate the phrase 'the ideology of free culture' in the work of theorist Matteo Pasquinelli (2008, 2010). This phrase is used at times throughout this paper as an umbrella term for the broad rage of utopian ideologies surrounding "open source", the "networked information economy", "collaborative culture", and various non-market and non-proprietary practices emerging around the digital production and distribution of information, knowledge and culture.

[2] Friedrich Kittler writes about the Church Turing Hypothesis in his 1995 essay *There is no Software*. The Church Turing hypothesis is founded on the primacy of material abstraction through logical processes, advancing the claim that any programmable function can be performed by a computational machine. As a thesis therefore, it asserts the dominance of software over hardware.

[3] Political economy is characterized as the study of the interrelationship between the production and exchange of value and the distribution of power, agency and governance.

[4] The reader is referred to the work of Richard Barbrook (1997, 1998), Lawrence Lessig (2004), Howard Rheingold (2000, 2002), Douglas Rushoff (2002), Axel Bruns (2005) and Kazys Varnelis et al. (2008).

[5] Various technological models stratify the communications network as a means to delineate a series of interconnected protocols and standards governing its operation. Examples include the OSI model and the TCP/IP framework. In cultural theory, a triadic distinction is often made between content: the data, voice and rich media objects distributed by an underlying network infrastructure that is further divided along logical (software defined) and physical properties (concerning the connection of physical devices) (Benkler, 2006). While these models are conceptual frameworks and vary across disciplines, all utilise a tiered framework that extends downwards from an applications layer concerned with the provision of legible end-user content, through underlying logical protocols and standards concerned with applications presentations and transmissions, to a substrate network that defines the functional interoperability of hardware devices concerned with routing, transmitting and storing data channelled over a series of finite resources such as spectrum, bandwidth, data storage and power. Each layer is a co-dependent assemblage of functionalities. However, the layer model nonetheless visualises a hierarchy across both technological and cultural studies that places economic and cognitive emphasis on the higher applications layers, where content, and as a result, the consumers and producers of information, reside.

[6] With the emergence of software studies (Fuller, 2008) as a discrete field of research, coupled with the emergent discourses around "network cultures" (Terranova, 2004), a number of studies have traced the distribution of biopolitical agency through the algorithms, protocols and standards governing the logical layer of the network (Galloway, 2004, 2007; Galloway and Thacker, 2007; Mackenzie, 2006; Fuller et. al, 2008, Gillespie, 2010; Pasquinelli, 2010; Fuchs, 2011). This produces a counter-critique to the linear progressive celebration of decentralised topologies or non-discriminatory protocols favoured by the

advocates of free culture. Sites of analysis include immanent processes for the aggregation and analysis of habits or consumption and sociality, the politics of DRM and IP, through to the extraction of digital labour. Where these theorists trace the distribution of economic and political agency through software, forms of 'exploit' are in turn identified through software-defined activism (Galloway and Thacker, 2007). There is little discussion of the substrate network as part of this political assemblage, beyond analysis of the asymmetrical distribution of communications. It is presented as benign architecture, the "dumb pipe" over which an intelligent system is constructed (Fitchard, 2010).

[7] Avatars consume more energy than the average Brazilian (Carr, 2006; Pasquinelli, 2008). Data centres are predicted to be greater polluters than air traffic by 2020 (Lohr, 2008).

[8] Floor space is running out for most users today but use of IT is accelerating. Power is also becoming increasingly expensive and difficult to access. Also there are increasing carbon footprint awareness and the need to be energy efficient. To meet these challenges, container based centres are useful and will enable customers to expand their data centre capacity easily and quickly. Expect cost savings of 30-50% across various parameters such as real estate, construction, power, management and people costs. (The Hindu BusinessLine, 2011)

[9] Emerging Mobile Virtual Network operators (MVNOs) such as Tesco and Postfone, for example, own no physical infrastructure at all, and instead rent capacity in the form of bandwidth and billing services from traditional network operators (Forde, Macaluso and Doyle, 2011).

[10] Advances to the virtualisation of networks are also significant. While they contribute to the development and employments of low cost agnostic networks (Dawson, 2011), transferring intelligence to software architectures, they have also presented the open source community with possibilities to implement communications networks in environments and spaces where the prohibitive cost of core and backbone infrastructure was until recently a major barrier to implementation. For more see projects such as OpenBTS or Village Telco. <http://openbts.sourceforge.net/>, <http://villagetelco.org/>

[11] A cognitive radio is a radio that is aware of the environment in which it is operating, and that can reconfigure its operating parameters to best suit the environment. In the example in this paper – the radio would be able to sense or otherwise glean what frequencies bands are free, change its operating frequency to avail of an empty band, shape the wave it is transmitting to fit in the free band and support whatever application the user requires.

[12] A femtocell is a small cellular base station, typically designed for domestic use. It connects to the ISP network through the consumer's broadband connection. Femtocells are designed to extend and improve a service provider's coverage and capacity, especially indoors. [13] National Regulatory authorities are currently developing protocols for dynamic spectrum access in the frequency bands recently vacated by the transfer from analogue to digital television, known as TV White Space. The legislation includes a number of principles for negotiating access such as geolocation with database lookup – a technique that determines whether a frequency band is or is not currently occupied by the incumbent. Marcus (2010) has written about the politics of TV white space databases, arguing that these make use of a highly conservative wave propagation model that presents licensed spectrum as occupied, even though this is frequently not the case.

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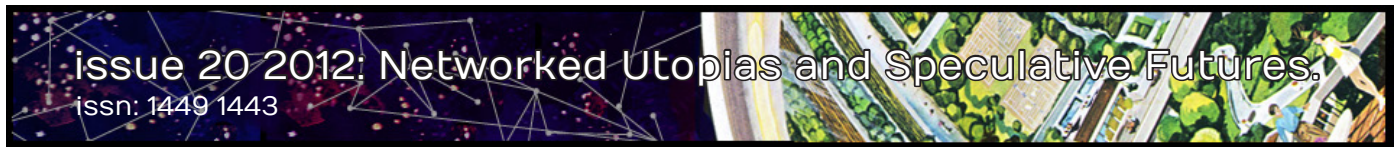


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FCJ-139 Sand14: Reconstructing the Future of the Mobile Telecoms Industry.

Laura Watts
IT University of Copenhagen

*Which is farther from us, farther out of reach, more silent – the dead, or the unborn?
Those whose bones lie under the thistles and the dirt and the tombstones of the Past, or
those who slip weightless among molecules, dwelling where a century passes in a day,
among the fair folk, under the great, bell-curved Hill of Possibility? — Ursula K. Le Guin,
Towards an Archaeology of the Future*

Prologue

I was researching how the future gets imagined and made in the mobile telecoms industry, and had been since 2003. But I stood in a cloud on a remote Scottish island, rain refusing to fall, only seep through waterproof layers to my skin. Laid out before me were the foundations of a Neolithic village, five thousand years old. Its remains were marked by upright, glistening flagstones and low-turf walls; a square hearth before me filled with burnt-orange gravel. My chilled hand curled around the curves of a strangely shaped carved stone ball, its polished granite-pink surface carved with odd nodules. It was a replica of a Neolithic carved stone artifact found nearby. My thumb moved around and over the carvings as though caressing a mobile phone, fascinated, imagining.

Here, in this landscape filled with five thousand years of technology, in the islands of Orkney off the north east coast of Scotland, different futures became possible. Here I could imagine the making of mobile telecoms futures that were un-imaginable before. Previously, in the major mobile phone company near London where I had conducted my fieldwork, the future was

ubiquitous, the same everywhere. Here, I could make a mobile telecoms future that resisted such tropes of ubiquity and universality. Formed in the freezing rain, prehistoric archaeology met and merged with ethnographic evidence, and a different mobile telecoms industry could take shape. Not a science fiction, but an evidence-based future condensed in the rain by an ethnographic method that worked together the uncompromising sociomaterials of evidence with the always-necessary creative work of the imaginary; a method to make an ethnographic account of how other futures are possible in the mobile telecoms industry.

This paper is not simply one account of how the future is made in mobile telecoms, but a practical and political experiment to create a mobile telecoms company that does the future differently. What follows is the making of the ethnographically imagined mobile phone company, Sand14, and its possible futures.

Method – Future Archaeology

Sand14 is the effect of an experimental method (Law 2004). As I stood in the rain before the remains of the prehistoric house I enacted a thought experiment. In my ethnographic imagination instead of a square hearth filled with gravel, I saw a glowing metal stove throwing out heat; in place of the flagstone foundations, I saw a stone building rising up into a grass-covered dome; instead of standing in freezing wet air, I stood in a white kitchen with corkboard walls covered in documents and artefacts from my archive. I stood in Sand14, a version of a mobile telecoms design studio constructed from my evidence and recombined into a new form.

In my reconstruction the walls around me were filled with the hundreds of artefacts and documents I had collected from my fieldsites in the mobile telecoms industry between 2003 and 2007, and all the notes and drawings from my four ethnographic notebooks. I could hear the voices of designers in the company, their words a repetition of those I had heard and recorded during my fieldwork:

"I create memories [is the intent of the concept]," explained one voice from the design studio.

"Memories need simplicity, clarity. Just the right memory... [We need to] help people re-experience their memory... other people's memories," said another.

Sand14 was literally made from my evidence in what Donna Haraway might call a material-semiotic experiment; an experiment that acknowledges the inseparability of epistemology and materiality; that knowledge is always made, and made in situated practice (Haraway 1991). Situated futures are located in the epistemology and geography where they are made. The future is foreclosed and stabilised through practices such as standards-making, classification, organisational strategy, prototypes, demos, technology stories and so on (Bowker and Star 2000; Brown, Rappert et al. 2000; Bloomfield and Vurdubakis 2002; Bloomfield 2003; Rosenberg and Harding 2005; Suchman 2007). Drawing on a well-worn strategy from science studies and feminist technoscience my method understood the future as a situated knowledge made in ongoing and often difficult sociomaterial practice (Watts 2008; Adam 2009). Following Haraway's optical metaphor for knowledge-making my experiment was a diffraction of ethnographic evidence, one that was open and unashamed in its generation of knowledge that was both creative and empirical. I resonated with the politics of diffraction: a resistance to reflections that reproduce the same pattern of knowing elsewhere; and a commitment to the generative work of diffraction, of making a difference in the world (Haraway 1994, 1997). Sand14 was the result of this diffraction experiment. It was the interference pattern.

Ethnography is always a matter of partial connections and patterns, as anthropologist Marilyn Strathern has argued. Ethnographic accounts are always parts that are never just parts of some pre-existing whole (Strathern 1991). One cannot reconstruct a whole culture from ethnographic pieces. Fieldsites are not 'out there' ready for representation, rather data is created and curated during fieldwork as fragments. But such fragments can never be reconstructed into some complete whole. There are always gaps, slippages. All that can be done is a generative, and therefore creative, form of reconstruction; the bits and pieces fitted together one way or another (but not just any way, evidence has edges and boundaries that go together in some ways and not others). My method resonated with archaeology, with the generative potential of pot sherds and stone remains that can never be fitted together to say how it was in the past, but only how it may possibly have been, given the partial evidence. Just as archaeology reconstructs, and so generates the past from fragments of evidence (Shanks 1992; Pollard 2004), so a 'future archaeology' reconstructs and generates the future from fragments of evidence. Reconstructing my evidence was a significant part of my ethnographic research.

That ethnographic accounts are generative rather than descriptive is not new, of course. Ethnographic fieldsites have long been argued as not found but located and made (Gupta and Ferguson 1997); as a poetic juxtaposition of collected evidence and writing (Clifford and Marcus 1986; Clifford 1988); or, as an effect of the translation back and forth between fieldwork and deskwork locations (Strathern 1999). But, for me, located-ness implied that place was also an effect. It, too, had to be done. There was nothing *a priori* to place. In ethnographic writing the writer has to make a place as part of their account. For sure,

there are crucial matters of veracity and integrity, of politics and empirical commitments. To be clear, my argument is not for a reduction of place to semiotics, or for any floating disembodiment, but rather the inverse: a method that takes the embodied, visceral and performative effect of place as a matter of material-semiotic agency.

This is not a theoretical sleight of hand, but an experiment with particular apparatus and parameters. Philosopher of science, Karen Barad, argues for an agential realism, where an experimental apparatus has agency with ontic effects: change the apparatus and the world is made differently (Barad 1999, 2007). For me, the apparatus that diffracted the future of the mobile telecoms industry also had to include geography as much as epistemology. Change the place, and the future of the mobile telecoms industry must be made differently. Landscape has agency in future-making. Place can 'kick back' (as Barad puts it). If futures are made, then they are made differently in different places. The particular location of Sand14, in amongst the standing stones and prehistoric monuments of the 'Heart of Neolithic Orkney' World Heritage Site, was the apparatus that diffracted my evidence, collected from inside the tinted glass walls of the mobile telecoms industry near London. Orkney made the mobile telecoms future differently.

Sand14 was the enactment of the method I thought of as future archaeology. It was one possible reconstruction of my evidence, diffracted through one particular place. However, it was possible to diffract my evidence in many different ways, via many different places. So, why Orkney and not elsewhere? Why conduct this experiment in future-making using the Orkney Islands as apparatus?

The answer was literally in the walls. It was in the ethnographic fragments, the torn out magazine pages, the highlighted notes, all the print outs mashed up on the corkboard from floor to ceiling in my reconstruction. For my method of future archaeology was localized to my research in the mobile telecoms industry. It was not off-the-shelf and applied, not a universal passkey as philosopher Michel Serres might say (Serres 1995, 92). The method was as much an effect of my fieldwork as my evidence.

In the walls I could see two distinct groupings of my ethnographic evidence, two particular characteristics of the future in the mobile telecoms industry. I had woven my evidence through a flatter, more recognizable ethnographic method, into two key ways in which my fieldsite made its future. It was these two qualities of future-making in mobile telecoms that my method of future archaeology kicked-back at. It was these two futures that Orkney diffracted with, and made otherwise. To understand Sand14 as an interference, then, required an understanding of these two mobile telecoms futures.

I sat down at the hardwood farmhouse kitchen table before me, and poured some hot tea from a pot. In my other hand I still held the strange carved stone ball, the curves of its cool granite surface a magnet for my thumb. As I held this enduring prehistoric technology I considered the two groups of evidence that had been reconstructed into Sand14.

Evidence – Future Durability

Two overlapping pieces of paper formed the centre of the first set of evidence: a white sheet with the word 'Capture' hand-written in large black felt letters; and, beneath it, a highlighted quote from my ethnographic notebook, '*It's the science fiction dream*'.

I had gathered these two fragments during a one-day workshop at a mobile phone manufacturer's design studio near London. I remembered how it had been a dull March day. Six people had flown in to nearby Heathrow airport from corporate sites around Europe, or been given a pass to enter the design studio from elsewhere on the company Research & Development campus. They had one day to create a concept for a new cameraphone device, in response to an abrupt change of corporate strategy. The new cameraphone was to be a mobile phone with a camera built-in, with perhaps some video capability (this was 2004, before such things were commonplace). There had been tension in some of the faces around the room.

The industrial designer leading the workshop, Tony, had stood with felt-pen in hand, ready to record their proposals and ideas on a flip-chart.

"*I create memories [is the intent of the concept],*" he had explained (and I had recorded as ethnographic evidence, heard again as part of Sand14). "*The consumer typology [for the concept includes] the Event Snapper, the Innovator, the Memory Keeper, the Expert...*" [1] He had outlined the consumer types in detail. It was a sophisticated classification model, developed by the company over several years.

Then the representative from mechanical design, his office silo-ed away from me in the opposite building, had leapt up with enthusiasm to do his presentation. "*We brainstormed around the evolution of technologies... 3D displays on phones, expect in a couple of years... [In 2006] you don't see the pixels... it's beyond the human capability...*" Over the next hour he

had gone through his pack of thirty or so slides, each one a different technological feature and possible future. Tony made a list on the flip-chart of the key terms and comments from the group.

Oral storytelling, supported by slides, was the *modus operandi* of the company. The witnessing of decisions was a verbal and visual process, an oral practice and performance of future-making that resonated with Diane Vaughan's account of prediction and fact stabilisation at another site of future technology, NASA (Vaughan 1997, 1999). As decisions moved up and across the company, slides accumulated, and their associated stories became embedded in a growing account of the concept. The future product created at this workshop would accrete slides and stories from that day forward as it passed through different groups of people. The oral stories would shift as the political and strategic work they needed to do shifted, that was part of the skill of the storyteller. The design studio manager, who later reported up to the executive board, told me he had collated a pack of several hundred slides on one project to present to the board in a matter of minutes; a highly skilled practice weaving together visuals from presentations he had never attended into a coherent account of an object.

The mechanical designer had just finished discussing his concept for a cameraphone, which included video conversations, when a marketing manager entered the room. The marketing person had nodded at the slides: *"It's the science fiction dream... All the advertising that Hutchinson did... still can't get people to do this... and there must be something... I am an optimist... It doesn't seem possible that you never want to do that."*

This was a moment that haunted me. He was no longer just speaking of recording and sending video but of talking face-to-face through the screen. He was speaking of a 'videophone' concept. The videophone had permeated so much of my evidence and experiences in the industry. It seemed to circulate as a 'science fiction dream' – made popular through the Bell Labs prototype featured in Stanley Kubrick's 1968 film "2001: A Space Odyssey", when a character enters a videophone booth and makes a video call home to Earth. But it was also glimpsed in Fritz Lang's silent "Metropolis" (1927), and reproduced as future *de facto* in science fiction cult classics such as Ridley Scott's "Blade Runner" (1982) and James Cameron's "Aliens" (1986). This science fiction dream was when video communications would replace voice communication, an evolution in (assumed) ever-increasing bandwidth, 'from voice to video communication' as one industry advert put it. The dream was not one of video conferencing, it was not a Skype dream when callers would schedule a video call. It was an evolutionary dream when all spontaneous contact and calls would be video-based, when pictures would replace talk, and voice telecommunication would be devolved into a near-forgotten legacy.

It was a persistent dream in the industry. The first videophone was demonstrated at the Chicago World Fair in 1933. It was launched by Bell as a commercial fixed-line trial in 1969, with analysts predicting a billion dollar business in twenty years (Noll 1992). Yet it had faded away. Mitsubishi launched a similar service in 1987, British Telecom in the 1990s, AT&T tried in 1992, and there are no doubt others. Each time the videophone failed to sell in numbers. The Hutchinson mobile videophone, mentioned by the marketing manager, a mobile phone with built-in cameras similar to more recent smartphones, was launched in the UK in 2001 and vanished with little trace (Gray 2000). But despite this repetition of market failure the industry continued to reproduce the videophone as a well-stabilised future. Those at the workshop seemed to have no memory of the last forty years of the videophone within the industry. Instead of citing this well-worn past they reproduced the videophone as an imagined future, the same old version of video communications replacing voice.

The moment had passed. The mechanical designer sat down, his slides now part of the new concept for the company. The next presentation had been from a quiet woman sitting next to me, a representative of the elusive Social Research team. She began to present her account of the 'social future' of the new cameraphone: "*[The] basic psychological needs for achieving a quality of life [are]... Storytelling, Sharing, Re-experiencing,*" she said. She spent some time explaining the importance of these three 'user needs' – derived from the management textbook approach to Maslow's Hierarchy of Needs (Maslow 1943; Cullen and Gotell 2002) – and she discussed the supporting social research conducted at various locations around the world.

After lunch we reached the moment when the group had to transform these diverse oral presentations from engineering, marketing, and social research into a bounded, particular future concept for a cameraphone.

Tony pointed to his notes on the flip-chart, collected from the discussions. "We're... trying to design a concept that does a number of things... Can we cluster the important ones [into key features]?" He asked everyone.

He then transferred all the key words and phrases collected during the meeting on the flip-chart onto individual pieces of paper. He scattered the thirty or more pieces of paper over the paint-flecked floor. Everyone had crouched and huddled around the words, moved and grouped them on the floor, studied the associations and relationships trying to fit them together into meaningful groups. Over the next half an hour or so they collated the sheets of paper into three messy groups; three qualities that would highlight the key features of this new cameraphone device. Tony then went around each of the three piles of paper and,

in discussion with everyone, gave the group of features a name, a category. These three categories were to define the future of their new cameraphone product.

"The three super-categories [drawn from the scenarios] are Capture, Consume and Manipulate," announced Tony. He had written each category on a new piece of paper and placed it on top of the appropriate collection.

Three words. Three words that defined a future.

"This is not coming out of thin air. This comes out of two years [research]," Tony had said. There had been quiet, perhaps embarrassed, laughter. All the subtle inflection during the discussion, all the care and specificity of the social research, all the caveats and concerns of the mechanical engineer, all erased by three words, soon to be transferred to a PowerPoint slide and re-told in a short oral story to senior management. Two years of research into three words? By some strange quirk they had begun the workshop by outlining the intent of the future device as a memory-maker ('I create memories') but their discussions had then erased forty years of videophone history, and flattened two years of nuanced, interdisciplinary research into three words. Yet the marketing manager had been upbeat and declared the outcome of the workshop *'aspirational'*.

The lack of enduring memory in the mobile telecoms industry, of documented history, should not have surprised me; in my industry experience the past was not considered important. Corporate memory has long been held as problematic in technology industries; history-making bound up with corporate and techno-cultural ownership struggles (e.g. Schiffer 1991). In this design studio near London the new cameraphone concept, which captured memories and enacted an earlier science fiction dream of the videophone, was made by simultaneous erasure and reproduction of an old future. The old videophone future was made new again. Even the memory of the previous mobile videophone from Hutchinson was discarded. The videophone was an asymptotic future, always made again at the limit of the possible and never reached. I had just witnessed the practice through which such erasure and replication took place. The detailed and subtle research conducted by the different teams was flattened (literally) into three piles and three words ('Capture, Consume and Manipulate'), flattened and almost erased to create a 'new' cameraphone concept. The oral story that would be passed on in these three words would contain very little of what I had heard that day. It seemed that the workshop was not intended to imagine something 'new' as I had anticipated, but to demarcate a future concept as a boundary object (Leigh Star and Griesemer 1989). This shared object that the inter-departmental meeting had made and witnessed could now move around the company between different politics and epistemes,

from mechanical to design to marketing to senior management. It was making the boundary of the concept that mattered, creating its coherence and stability through inter-departmental agreement, not the specific future it contained.

As an ethnographer who had also worked as a designer inside the industry in a prior career, I had a love for its cyborg sociotechnics. And I felt it was a lack of love for the cameraphone concept that was the issue. I was inspired by Bruno Latour's sociotechnical love interest. In his detective work tracking down the crime of passion that was the end of the Aramis personal rapid transit system, he argued that it was because the developers did not love Aramis that she 'died' and never became a commercial reality (Latour 1996). Over 17 years the developers of the train system never changed the concept, never made the difficult compromises to make the technology work, instead they idolised and adored the concept as pure, un-negotiated possibility. The same idolatrous love was true at the mobile telecoms industry workshop: there was an adoration of a particular future, the videophone. In the design meeting I had witnessed the process by which an extraordinary amount of (very expensive) research was flattened into a bounded shape entitled 'Capture' 'Consume' and 'Manipulate'. These three words had been chosen to encapsulate a future mobile phone. It was into this agreed boundary that a new cameraphone would be poured. This was the shape that would hold during the coming design and development. But this boundary for a 'new' device was also in part constituted by an 'old' dream – the videophone. In following their science fiction dream they replicated an old future that had already failed, and kept the dream alive. As part of the cameraphone concept, the videophone dream was re-made as a future.

So here I identified the first major characteristic of future-making in the mobile telecoms industry: its lack of enduring memory.

To experiment with doing things differently I needed to avoid the repetition of worn-out futures, such as the videophone. In my method of future archaeology I needed to be located somewhere both where the past was remembered and technological histories endured, and where there was an abiding commitment to the future. To do my experiment I needed a place imbued with an unforgettable technological *longue durée*, where undead futures such as the videophone could not be resurrected.

I looked down at the strange carved stone ball, its smoothed surface now warm as I turned and turned it in my hand, and then looked around my reconstruction, smiling.

Sand14 as a diffracted design studio was made, in part, from a five thousand year old Neolithic monument. It was made within one of the most extraordinary Neolithic landscapes in the world: within half a mile were several towering stone circles, chambered tombs, standing stones, a vast citadel of stone buildings still under excavation, and all around the archipelago were monuments and museums filled with prehistoric technology. There was no forgetting the past here. Time had depth. A local Orkney playwright had explained that out of his window was a Bronze Age village, across the road a Viking settlement, on the shoreline remnants of Iron Age buildings, and behind him a standing stone. "So it informs the decisions you make," he had said. "It's like being part of a long set of beads, that stretches thousands of years in to the past, and you're just a dot, a part of it. And it influences how you think about the future." Orkney was a place that thought a great deal about the future. Beyond the line of hills to the west lay the wave energy test site for the European Marine Energy Centre, a world-renowned seascape where local people were participating in the formation of a new renewable energy industry. Orkney, although steeped in time, was not a place mired in the past, it was a place moored in the future.

Its 'future durability' was why I had diffracted my evidence through Orkney. Its technologically ancient landscape resisted the forgetting and the foreshortening of temporality that happened in the mobile telecoms industry near London. In this landscape old futures would not be forgotten. Past and future technology endured in the islands, were imagined and made to endure. In the words of a well-known local poet, 'the Orkney imagination is haunted by time' (Mackay Brown 1969).

Evidence – Future Locality

Unable to resist I pressed the nodules of the carved stone ball with my index fingers, as though typing or playing with the keys on a mobile phone, and looked at the second set of evidence swarming over the walls that constituted Sand14. This was the second characteristic of future-making in the industry that my method of future archaeology diffracted.

There were copies of two press releases that were central to this characteristic, neither concerned with the handset, but rather the imagining and making of the network infrastructure.

Orange UMTS launch reinforces 3G confidence at World Congress. In the convention hall, in the private Nortel Networks demo centre across the Boulevard de la Croisette in the Majestic Hotel, and around the streets of this picturesque city, users are recognizing that '3G is for Real' in 2004.[2] — Nortel Networks press release, 23 February 2004

The Mobile World Congress (previously known as the 3GSM World Congress) is one of the industry's most important annual events. Now in Barcelona, it was for many years held in Cannes, France. I had attended the conference in 1997 and 1998 during my time working in the industry, and had experienced the 'floating gin palaces' (as a journalist interviewee had put it) of the corporate yachts, the exuberant lasers and firework displays over the sea, and the intensive deal-making and demo-ing by over 30,000 senior industry figures, many paying over \$4000 for a conference pass. The press release was from several years later in 2004, during my ethnography, when I interviewed several attendees. This was a time soon after the auction of 3G radio spectrum licenses in Europe, which had created vast corporate debts (\$600 billion in one estimate; Cheng, Tayu et al. 2003), an industry crash that had led to over a million people being made redundant (an estimate made by the journalist), and which some industry analysts regarded as nothing less than an industry 'apocalypse'.^[3] It was a time when the 3G network technology that would utilise the spectrum and generate revenue to repay those vast debts was still in development. Suffice, there was much invested (literally) in the future of 3G, and much invested in stabilising this sociotechnical future and making it 'real'.

So how was 3G made 'for real' as the press release suggested? What practices were involved? The second press release, pinned up on the Sand14 wall, was instructive.

Nortel Networks, Orange Deploy UMTS in Cannes. Nortel Networks and Orange have completed a five month UMTS network deployment to provide live third generation (3G) coverage for Cannes and portions of Nice - including the airport - for 3GSM World Congress 2004. — Nortel Networks press release, 23 February 2004

The scale of the 3G network installation was staggering. The whole town of Cannes and portions of Nice had been modified. This was an entirely new mobile network infrastructure deployment, requiring a physical re-working of the landscape. Buildings throughout Cannes and Nice would have been co-opted for the equipment, new cellsites and antennas erected on roofs and walls. All this had taken five months to deploy. Five months of delicate engineering for three days of conference; and this was no well-rehearsed, well-packaged technology, but an unstable trial network. Ultimately, when the mobile telecoms industry

arrived and switched on their phones at Nice airport, the mobile network would simply work. [4]

But, then, those in the industry would expect nothing less. In the places where the industry was located, such as near London Heathrow airport where the majority of the UK industry was based, mobile signal coverage was pervasive. The wireless and wired landscape inhabited by the industry was thick with high-speed data services; it was one of the first locations for two-and-half-generation GPRS mobile data networks to be deployed. The everyday experience for those designing the future was one where the mobile network was 'Always On' as the popular industry saying put it. Thus 'Always On' was part of the natural-cultural landscape of the mobile telecoms industry.

But there is a geo-politics to such mobile network coverage: other parts of the UK, particularly large parts of rural Scotland, remain without mobile data access. There are chronic 'not spots' without wired or wireless broadband data due to the distances of copper cable involved or the mountainous landscape, and there are no plans to deploy 3G networks in such locations (Consumer Communications Panel 2011).

Network infrastructures are always socio-political as well as technological, as has been long argued (Star 1999). The labours of installation and maintenance, the economics of their roll-out and operation, their participation in national politics of 'access' are integral to such network infrastructures as objects (Langtry 1998; Crow, Longford et al. 2009).

But this particular infrastructure in 2004, this trial network in Cannes, was enacting a particular sociomaterial future, one in which 3G was a reality, as were the billions in revenue that might derive from such a network. The wireless landscape of 3G was 'for real' during the conference, and in Cannes and parts of Nice, but only during the conference, and only in that location. The future might be 'for real' but it was transient in time and place. This temporal and spatial partiality was in stark contrast to the extensive promotion of the network during the conference. My ethnographic evidence included a sea-bright photograph of a cafe on a pontoon that year, with a vast banner hanging in the sun: 'Orange Everywhere'. The Orange CEO at the time was explicit: 'Our theme at Cannes this year is Orange Everywhere which is about giving our customers what they need, whenever and wherever they need it'. But this 'whenever and wherever' wireless landscape constituted a place that did not exist most of the year; the conference attendees were not in everyday Cannes but in a 3G-augmented Cannes, and it was this natural-cultural landscape made to be 'always on' that reproduced a very particular industry future: *ubiquitous access*.

The dream of 'ubiquitous access' was most often expressed in the oft-repeated industry slogan: 'Anyone Anywhere Anytime'. There has been extensive comment and critique of this utopian future of perfect telecommunications: its production of an idealised perpetual contact (Katz and Aakhus 2002); its Judeo-Christian heritage in the Tower of Babel (De Vries 2005), its historical reproduction through time from nineteenth century telegraph futures (Mattelart 1999), through to the popular versions of Marshall McLuhan's 'global village' and Bill Gates' 'friction-free capitalism'. The utopian dream of perfect connectivity through time and space also resonates with the future articulated in ubiquitous computing (Dourish and Bell 2007), another example of a situated future reproduced over several decades.

The trial 3G network was yet another performance of this utopian future. Its transformation of Cannes was a set of sociomaterial practices that altered the landscape and enacted the industry asymptotic dream as an experience. In this fleeting place a partial infrastructure, particular to its place and time, was experienced as a pervasive network that was 'whenever and wherever'. Such a transformation of the patchy and partial prototype into a universal 'real' network was possible, in part, because of its continuance with the wireless and wired landscape the industry inhabited. The industry dwelled in particular locations where wireless data networks were experienced as everywhere; it moved in a distributed landscape of an *Always On* infrastructure, and the 3G trial network was an example of the extraordinary work necessary to maintain this tenuous place. However, the ubiquitous network was not everywhere, and would never be everywhere: locations that were deemed not important or not of value, such as 'not spots' in rural and remote locations, were not included in this 'whenever and wherever'. Such places required national policy and regulatory interventions that operators were forced to adopt (e.g. Ofcom 2006). Ubiquity was not universal but partial, with a socio-economics that made particular rural landscapes, often synonymous with low-income areas, invisible.

This was the second characteristic of future-making in mobile telecoms that I identified: its lack of sensitivity to future locality.

To do a different mobile telecoms future, then, required a diffraction of the potent future that was ubiquity. Rather than a future that reproduced (always-partial) ubiquitous access, the future made by Sand14 needed to retain the sociotechnical specificity of infrastructure. My method of future archaeology needed a place where the local had effects, a place where ubiquity would be resisted. Orkney was a remote archipelago of predominantly farming communities with a low-density population: around 20,000 people were scattered over twenty or so green and heather islands. This was a place where all infrastructures were visible and an everyday concern, as is often the case for island locations in the world (Baldacchino 2007). It was expensive and problematic to move electricity and data around.

Cables had to be laid undersea, through important wildlife habitats, or archaeological sites. In the fierce, near Arctic storms the lights, and often the phones and internet, went out. Moving bits and bytes of data was a visible and difficult endeavour, with many of the islands on microwave links for their so-called fixed line telephony; sometimes island telecommunications were cut off for days after a power-cut. Yet even though this was the UK, a bare few hundred miles from the telecoms industry near London, it was impossible to imagine universal, friction-less grids of electricity or data here. Network infrastructure snagged on the hills and seas that resisted radio wave and cable propagation, and snagged on the distributed population where the cost-benefit ratio of antenna, copper and fibre rollout did not add up. Orkney was a landscape that resisted ubiquity in the sociomateriality of its very islands.

'Future Locality' and 'Future Durability' were the two characteristics that the Orkney Islands, and in particular the 'Heart of Neolithic Orkney' World Heritage Site, possessed as a place. Its natural-cultural landscape had an agency that both haunted time and enabled futures to endure, but also resisted ubiquitous futures and made the partiality of network infrastructure visible. This was why Sand14 was here. This was why I was here.

But the most important question remained. What did Sand14 look like as a diffraction of mobile telecoms futures? What other future did it enact? What was the result of my experiment? This, then, is one result. One small effect. And I held it in my hand: the prehistoric carved stone ball.

The Experiment – Sand14

In my reconstruction, through my diffracted evidence, I heard voices from outside the kitchen and headed away from the warm peat fire towards them. In the large studio space beyond, sunlight was shattering the rain-grey cloud and reflecting in sharp edges on the floor. Through the vast semi-circular window, oil-dark seals curved like moons, watched me from the beach.

Three people were talking together around a flatscreen, sipping mugs of steaming tea; three designers who worked at Sand14, an effect of my diffraction as much as the building. Their words were drawn from the practices and conversations of the designers and engineers I had engaged with during my ethnography. They were discussing their ideas for a new

mobile device concept, for this was how my experiment was to be performed. Their remit was given by my fieldsite near London. My experiment was conducted by the way Sand14 might take a design remit, as fragments of ethnographic evidence, and reconstruct a different mobile telecoms future.

"I create memories [is the intent of the concept]," explained Simon, a mechanical designer with spiked white hair. His statement was that familiar fragment of evidence from the workshop near London. As it was the conceptual intent for the designers in London, so it was the conceptual intent here at Sand14. But in this experiment the outcome would be different.

Anne, the social researcher, agreed, *"memories need simplicity, clarity. Just the right memory... [We need to] help people re-experience their memory... other people's memories."* She pushed damp grey hair from her forehead, cleared her glasses.

"How do you stitch together an entire experience?" asked Simon, thinking aloud. *"That's the thing."* He was sketching in a notebook, speaking without looking up. *"How does a device help you to recover experience? ...How to create an experience for your senses?"*

"It's the art of enchantment, making something magical," suggested Soo-Yin, staring out through the window. The industrial designer stood pin straight, arms crossed.

They were quiet for a while, watching the seals slide away into the loch. Anne drained the last of her tea. *"[How do people] access something you hand on from generation to generation,"* she said. *"Digging slides up, box of prints from the attic... That's an experience we should understand... That nostalgic experience."*

Soo-Yin nodded at the view through the window, out across the loch to the distant stone circle on the dark horizon. She reminded the group of the excavations that were happening all around the islands, the experience of digging up artefacts from an archaeological trench; the sense of connection with the past that happened in those moments, the visceral sensory experience of almost touching people in the past (Holtorf 2005).

She noted that if they were going to take 'create memory' as an intent for the future device seriously then they had to consider for how long the memories should endure; some Orkney

families cited themselves going back hundreds of years. How would an object maintain memory, she asked. If the device was going to endure, be dug up from a decaying box, or found rattling around in a storm-torn, damp out-building, then the infrastructure for repair and maintenance was as integral as the radio network.

Anne nodded and gestured through the window to the wind turbine blades turning slow and pale in the far distance. Local companies had acquired expertise in the maintenance of wind turbines since it was too costly to send south for a repair team. The small island communities, a few hundred people, now had local experts in the maintenance of their electricity network. She suggested that they think in terms of an open architecture, publish a comprehensive manual, and work with the islands to establish repair companies, embed the skills in an ongoing organisation that could both endure and support people around the world. Islanders are often entrepreneurial, she pointed out (Baldacchino 2005). If the islanders could convert a car to an electric vehicle, manufacture biofuel, and operate as commercial energy providers, then they could fix an appropriately designed mobile device with catalogue components and a rubber band. She grinned.

She was drawing on ideas of fluid technology; notions of how a device can be designed to be maintained as one kind of technological object, but mutable in the way that its parts are constituted as it moves from place to place (De Laet and Mol 2000). A fluid technology is integral to, and inseparable from, the different communities and landscapes in which it is located. Its locality, the people and place, maintain and operate the device, re-design it *ad hoc* as it is repaired with locally available materials and social relations. Its parts change yet it still does the same work. Such a device is designed to be always local. It is designed to be appropriated and re-designed. The device that Sand14 proposed would be repaired differently in different places, with different things to hand. By designing the device to be fixed by different communities on different Orkney islands, they were also designing it to be fixed in different ways by other, different people and places.

Such situated sociotechnical infrastructure would help create an enduring mobile device. So this was their diffraction into future locality. But they still needed to imagine the form and shape of their future concept.

Soo-Yin laid out a copy of a National Geographic article on a recent archaeological excavation with a pink post-it attached that read: 'archaeology discovered'.^[5] She raised an amused eyebrow at Simon, who smiled in return and nodded towards my hand, clenched around the prehistoric carved stone ball found here in the World Heritage Site.

Following Simon's gaze I held up the granite-like carved stone. It had six circular ends extruding from its surface, as though pushing towards a surrounding invisible cube. What to do with such a shape, I wondered, rolling it from hand to hand, feeling the surface around the six nodules. The object resisted identification, seemed relentlessly alien, and I sought to find something familiar for comparison. I glanced at Simon's binoculars by the window and, inspired, held the stone model up to my eye, looked down one rounded end as though it were an eyepiece, a telescope into another universe within the stone, a microscope into the granite. There's a whole universe in here, I said, pretending to peer into the shape. Simon and Soo-Yin blinked, exchanged a glance with each other.

In the ensuing silence Anne suggested taking a walk to the passage grave just down the road, a prehistoric monument that was part of the World Heritage Site. Simon grabbed his rucksack stuffed full of camera gear, and we headed out into the rain.

It was a twenty minute walk through wind-whipped air to the four thousand year-old grass covered mound rising up out of a field. We stood for a moment before the dim entrance into the earth. The stone passage was a dark rectangle, only a few feet high, its stone sides slick with damp. We bent double and shuffled along, feeling wet rock against our hands, our heads and backs, hearing our footsteps and breathing, called on by a yellow lamp at the far end. And then we were out, able to stand up in a cold stone room at the heart of the mound.

In the darkness we could see the light of the world reaching down the long narrow shaft in a white-gold beam. At the mid-winter sunset, low sunlight from above the hills would flood this tunnel with momentary light. But for now I felt cut-off from that world, elsewhere.

Simon switched on the electric strip-lights, and we looked up into the corbelled roof, at the four standing stones marking the corners, at the precise architecture of its layers of stone, placed without crack or cement. The walls were smooth, damp-cool beneath my fingertips. In the centre of the three sides were square holes, entrances to small alcoves within which were once burials. Soo-Yin had her notebook out, caught up in the experience. She reminded Simon of the questions from earlier: how could they capture the memory of being in this extraordinary place, how to make such a memory endure.

Simon paced and then began to take video footage. He placed the camera on the edge of each alcove, and then in the doorway, capturing us from all four directions. He left the

camera running for a time as we looked around, felt the enlivened acoustics, the echo of our voices and movement. As Simon worked his camera we turned and turned again beneath the stone roof, over the gravel floor. We listened to the still air, watched a sparrow glide in through the passage way and alight on a corbelled edge, brown chin to orange stone. We were silent. We were silenced. The monument had a palpable effect, an agency that turned us inward, imagining.

We returned to the kitchen at Sand14 and shared a large communal pot of tea to wash away the chill. We were all subdued, thoughtful. The designers shared a few quiet words and promised me a demonstration of a future mobile device the monument had inspired.

Soo-Yin now placed four video cameras and a heap of cables on the table. Simon gestured for me to place the pink granite carved stone ball on to the table. I balanced it on one end so that the four circular nodules around its circumference seemed like telescope 'eyepieces' into which I might peer, as though into a granite-silica universe. They placed the four cameras around the sides of the carved stone ball to create a cross at the centre of the kitchen table. The cameras each looked in to a nodule on the carved stone ball, their lenses along the line of sight as though they were an extension of the ball's own rounded protrusions. The cameras almost extruded out of the four sides of the stone ball, so that it appeared as a nexus upon which they were focused. In this arrangement the carved stone ball was transformed into a mobile telecoms future.

My breath caught as Simon and Soo-Yin, hand on each camera, pressed four 'play' buttons in sync. Then they bent to each viewfinder in turn, watching the queued-up video play. They backed away and invited me to see.

Through each of the four cameras I saw a view of the inside of the passage grave, from each of the four directions – the three alcoves and the passage. The views looked in to the centre of the passage grave and showed us standing, turning, listening with quiet awe. I could see myself recorded through four directions. It was as if the stone chamber had been shrunk into the carved stone ball, and I was looking through its four sides into a memory; its round ends had become eyepieces into, not another universe, but a memory, a memory of a place, a memory of moments from my past. The ball contained a world caught in the permanence of stone. Placing my hand on the stone model I could imagine this enchanting, magical object being left alongside postcards and newspapers in some attic, lost beneath the floorboards, or buried in a midden. This was Sand14's generative diffraction into a mobile telecoms future that would create memories.

How would it work over time, I asked them, rocking the stone back and forth; it seemed to want to be touched. Simon covered my hand and smiled. It was kinetic, powered by movement, he explained, so that when it was found a generation or so later it would only need rocking or shaking to re-activate. Just as you did, he said. It meant that the videos could be kept for as long as the device endured. It needed no separate power transformer block or power cable, which would no doubt be lost in the ensuing decades. You pick it up and the images just come to life in your hands, the designer said. And then when you touch it against another device, he grabbed another carved stone ball and held them together, then a peer-to-peer network is established to transfer all the video data, or you can touch it to your computer and it will send the videos there, or send them over whatever mobile network is in the air. It's about using whatever infrastructure you have, he explained, including person-to-person. Gifts and reciprocity are sociotechnical infrastructures, too. We're network-agnostic, to be practical here in Orkney, he added with a smile.

I held the stone in my hand once more, and imagined finding it years from now. Perhaps it would be handed down, repaired and tinkered with in different ways by different parts of the island, gifted to me, and then some movement, a tilt, a shake, an accidental tumble would bring it to life and replay its memory a generation, two generations, later. And we would be there, the monument would be there, in the stone that had become unique to this place. In there we would be a memory, a story to be told, so that stone and story might be remembered and passed on.

This was not reproducing another videophone future, or some ubiquitous 'always on' device. This was something else— an enduring, located camerastone; a different future with different politics for the mobile telecoms industry.

And so perhaps it matters that after the making of this interference pattern, after one of the first performances of Sand14 to an industry audience in 2005, one mobile telecoms marketing manager was heard to say: "We should do something like that."

Conclusions

In material-semiotics 'storytelling is in no way an "arts practice"— it is, rather, a fraught practice for narrating complexity' (Haraway 1994, 63). Sand14 is a story and empirical experiment in 'future archaeology' that is committed to the materials and evidence of my ethnography. The camerastone is one outcome of that experiment, an interference pattern

constituted by combining my evidence with the natural-cultural landscape of the Orkney Islands. It is one speculative answer to the industry remit for a new mobile device.

The camerastone is not intended to be a well-bounded prototype, or a vision ready for adoption by the mobile telecoms industry. Instead it is intended as an intervention, a snagging technology that catches at what often slides passed in industry future-making, edges burnished from long use. It is intended to make visible the *durability* and *locality* of futures in mobile telecoms (see also Watts 2005, 2008). The camerastone, as a form of memory sharing device, does not reproduce old futures such as the videophone, but draws on the enduring landscape to imagine an equally enduring future, with a self-contained power system to support its use over generations. Its conception does not assume ubiquitous mobile access but supports *ad hoc* networks, including social exchange networks; and it includes the sociotechnical infrastructure for its ongoing always local, fluid repair and hence re-design. Rather than a ubiquitous dream of instantaneous data exchange, with distance annihilated, the camerastone is a dream of transmitting memories over time, from hand to hand, from generation to generation; the temporality is deep, and the landscapes rich.

The Sand14 experiment suggests that there are always possibilities for the future to be otherwise, possibilities that remain committed to the specific and extraordinary sociomaterial, socioeconomic, and seductive world that is the mobile telecoms industry. For although much is foreclosed, the future is never finished.

Epilogue

The walls of my reconstruction were gone. The experiment that was Sand14 had ended. The grass-covered dome of imagined possibility had dissolved into the mist, leaving only the foundations of a prehistoric village again. On the far side of the loch the lights of a house had come on.

I stood before the stone box of red gravel that had once inspired the glowing peat fire of the kitchen, and poured the orange stones through my fingers. As I leaned over, the carved stone ball that had inspired the camerastone fell into the hearth. It rested there for a moment, rocking.

I knelt on the edge of the prehistoric hearth, and burrowed down through the gravel with my hands. I pulled out a few handfuls of clean earth, and pushed the granite model down into the ground, then covered it with earth and gravel again.

It's there now, another archaeology, another fragment, for another time and another story.

This one is done with. I would be back for another story one day, but I would be back. For the future at Sand14 is always and *for always* a possibility.

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Biographical Note

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Notes

[1] All quotations are taken from ethnographic notes of the cameraphone workshop held at a major mobile phone manufacturer design studio in March 2004.

[2] UMTS, Universal Mobile Telecommunications Service, is one particular version of 3rd Generation mobile telephony (or '3G'), which is based on the technological standard of GSM. There are other versions of 3G that derive from different technological standards, such as CDMA.

[3] Quote from The Informer (2002) A Week in Wireless 66, 23 August 2002, published on telecoms.com

[4] Although the first 3G mobile phone (Nokia 6630) was not launched until after this event in November 2004, trial handsets were in use at the conference.

[5] This National Geographic image and attached post-it note were part of my ethnographic archive, collected from a mood board used for inspiring a new cameraphone concept in the mobile phone design studio.

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FCJ-140 Radio Feeds, Satellite Feeds, Network Feeds: Subjectivity Across the Straits of Gibraltar.

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This essay examines a series of events that took place over a few days around the summer solstices in 2004 and 2005. These events, under the collective title of *fadaiat—libertad de movimiento y libertad de concimiento* (freedom of movement and freedom of knowledge) ‘took place’ within the Madioq region of Spain and Morocco and the space of the Straits of Gibraltar in between. [1] This fixing of a temporality and a spatiality is indeed only provisional as *fadaiat* took ‘place’ prior to, after, within, and beyond the confines of a bounded series of days or a given physical location. The ambiguity of pinpointing final ‘locations’ in time and space of the *fadaiat* project reflects the ambiguity of its subject, namely the relationship of people and knowledge in border regions, with both imbricated among a digital world without ‘borders’. Borders are fixed as black lines on a map, electronic current flowing through the wires atop a separation wall, and in the lines before passport control agents. Yet borders are also malleable for the free flow of capital, and are thus forced to become partially permeable by the corresponding need for human labor to develop that capital. *fadaiat* worked within these contradictions and thus became not only a reflection on these issues surrounding borders, not merely a conference of like-minded individuals, but rather a space for the development of responses and alternatives to the hardening of ‘Fortress Europe’ and its antagonism towards Muslim and/or African immigrants and refugees. The event brought together an amalgamation of collectives keen on reconfiguring social-technical assemblages. In the words of the *fadaiat* editorial team:

borders are habitable territories that can't be reduced to lines on a map. They are environments that favour mixing and exchange, highly dynamic territories that generate a gradation of shared spaces, where the nature of passing through prevails over that of the barrier. To cross their thresholds means to physically move from one place to another, but, even more so, it implies the start of a transformation, to becoming-others (Monsell Prado and de Soto Suárez 2006: 169).

A consideration of borders is therefore not only a geo-political rumination, but also a rethinking of what it means to be amongst others. This is key given the marginalized history of the Ottoman Empire within Africa and the Iberian peninsula, the continued presence of Great Britain in Gibraltar, and the legacy of French, Italian, and Spanish holdings in north-western Africa, including the Moroccan-surrounded, yet territorially Spanish, free-trade exclaves of Ceuta and Melilla on the African continent.

The *fadaiat* project is vast, encompassing a book (with texts in Spanish, English, and Arabic), software, meetings, collectives, individuals, videos, and sound. Therefore this paper will be in two parts: the first laying out the project itself and describing one of its primary instigators, the Spanish collective *hackitectura*; and the second detailing a single aspect of the project, the creation and use of a non-commercial wireless link between Tarifa (in southern Spain) and Tangier (in northern Morocco). This transmission provided the first civil digital wireless data link between the two continents, enabling a series of events (including meetings, presentations, and parties) to take place amongst and between people who could not be co-present physically as a consequence of geographical and national borders. The second part will tie these actions to the earlier practice of pirate or free radio, and specifically to Félix Guattari's support of Radio Alice in Bologna, Italy, in the late 1970s and participation in Radio Tomato in Paris, France, in the early 1980s. [2] Guattari, through his radio activities and his theorisation of subjectivity, provides a productive means of understanding the importance of events such as *fadaiat* insofar as they perform different expressions of individual and collective desire.

Hacking (physical, digital, social, individual) architectures

fadaiat is the work of *hackitectura* (hackitectura.net 2011), a collective founded in Spain by Pablo de Soto, Sergio Moreno and José Pérez de Lama (also known as *osfa*). [3] Working since 1999, *hackitectura* has taken a special interest in creating alternative cartographies of physical and digital space, specifically areas that are overdetermined by state and corporate mediation. Their name, a portmanteau of *hacktivism* (which is itself a portmanteau of *hacking* and *activism*) and *arquitectura*, the Spanish word for architecture, is meant to suggest the productive possibilities of changing physical and digital space through the use of computational technologies. *Hacktivism* can be understood as a counter to the depoliticised ideology that is often assumed to underly the development of computer software and hardware, an ideology that presumes the neutrality of technology. Thus the *hacktivist* is concerned not only with questioning and responding to the means of technological production, and showing that its presumed neutrality is actually political, but

also with deploying this critique by designing, developing, and implementing alternative uses of technology for activist purposes. [4] *hackitectura* takes this further by engaging hacktivism within spaces both physical and digital. Their work therefore considers the role of technology in controlling and mediating access to space and conceives of different uses of this technology to provide for spatial reconfigurations that generate new forms of individual and collective subjectivity. Pérez writes, 'The concept of *hackitectura* itself proposes a practice which recombines physical spaces, electronic flows and social bodies, carried out by teams of architects, programmers-technologists and citizen-activists' (Pérez de Lama 2009: 103). Besides *fadaiat*, *hackitectura* has produced a number of other projects including *TCS2 Extremadura*, *Emerging geographies* (2007), a geodesic dome near an abandoned nuclear power station that enabled local residents, including schoolchildren, to imagine alternative futures for the area; and *Wiki-Plaza* (2005), an attempt to provide a wiki-like construction of public space that was showcased in Seville and Paris.

hackitectura achieve their broadened concept of the word space by conflating the physical and the digital, seeing the two as fundamentally intertwined. In describing a series of *hackitectura* projects, Pérez notes that, 'None of the spaces explained would have existed in the way they did without their digital extensions' (Pérez de Lama 2009: 104). Physical space determines the limits of digital space (how far wireless signals can travel, digital firewalls that restrict the flow of bits from one nation to the other) while digital space places limits on mobility in physical space (the electronic checking of passports at borders, the impressions others have of us based on our digital activities). By failing to see how the two mutually effect and construct each other, we would fail to understand how power in one space can migrate to be power in the other space, and to show power is always already inextricably intertwined in the two spaces. *hackitectura*'s key move is to understand this mutability of power, and to suggest that by hacking the power relationships within one space we can potentially affect the power relationships in the other.

This negative dialectical construction of physical and digital power—necessary to the free-flow of capital and labor in contemporary neoliberal societies—additionally provides an opening for resistance, one that *hackitectura* exploits in part through the use and creation of *libre* (free) software. [5] For example, by creating the tools needed to easily distribute audio/visual streams using *libre* software, *hackitectura* and their colleagues remove the need for commercial tools that perform the same function, while also, and perhaps more importantly, providing a widely broadened space for people to become individual and collective broadcasters, thus breaking proprietary control of media distribution technologies. So, what could at first blush be seen as a merely technical activity—the writing of software to distribute audio and visual data—is, upon further reflection, a deeply political act meant to increase the ability of people to present themselves outside of corporate and state controlled representations. This move has to be understood within the contemporary moment, where the so-called 'open' nature of the Internet is rather controlled by a variety

of state, corporate, and military actors with interests that are often antithetical, to say the least, to notions of social emancipation or collective desire. Bringing this desire into the physical space, at many hackitectura events DJs and VJs perform long into the night, often using the very libre software that provided the bases for the technical development of the projects. [6]

Coupled to this interest in providing alternative representational strategies in digital space, hackitectura also produces radical cartographies of physical space, especially as it concerns the abilities of people to freely move about the world. This mapping process requires much more than the understanding of geographical or territorial boundaries. Indeed, to see the concept of 'freedom of movement' alone one must map the social-technical assemblages of border control, the creation of 'free trade zones', the (forced or willing) transfer of 'labor' from one locale to another, the tendrils of the tourist industry, the fear of 'invasion' by the Other, the accounts of migrants attempting to cross the Straits, examples of resistance—and so on (Monsell Prado and de Soto Suárez 2006: 14–35). Simultaneously considering the physical and digital cartographies enables elucidation of each in the other, as diagramming the physical placement of network infrastructure (such as wireless access points or data centers) can provide clues as to the arrangement of the underlying digital networks.

The hackitectura 'collective' has to be seen within a wider array of social relations involving individuals, groups, organisations, ad-hoc arrangements, and so on. hackitectura is thus not only the name for a collective of researchers, but it also is a signifier for a group that belongs to a broader network of collectives and individuals, all of which were necessary for the *fadaiat* project. Indeed, the list of contributors (Harris and Gough 2004a) contains the names of ninety individuals and thirty-eight organisations who provided various types of expertise, the union of which made *fadaiat* possible. This is a form of affinity organisation well-known amongst alter-globalisation activists.

A special mention must be made, nevertheless, of the relationship with Indymedia Estrecho (Indymedia Estrecho/Madiaq 2011), as this link additionally ties *fadaiat* and hackitectura into a wider array of alter-globalisation activities. [7] The organisation of Indymedia Estrecho consists of individual Indymedia groups in southern Spain and across the Straits of Gibraltar into northern Morocco, an area collectively known as the Madiaq. Thus the link with Indymedia Estrecho was also part of the additional work to make connections not only with other Indymedia nodes in the Madiaq region, but also a wider collective of collectives that reaches across Europe, Africa, and other continents via transnational movements of autonomous orientations. Participation in *fadaiat* is not tied to a single geographic region, then, but rather is based on affinity and mediated representations

built by members of the Indymedia collectives themselves. The work needed to create these bottom-up representations requires a hybridity of actors and networks: actors, in the sense of the combination of disparate yet complimentary abilities into a collective project; and networks, in the both the re-appropriation of military and commercial technology and the (re-)activation of corporeal and non-computational experiences of networks. [8] Given that this region is heavily monitored and militarised—creating an antagonistic relationship with not only the present-day inhabitants, but also the history of movement between the two continents—the novel collectivity evinced here needs to be understood in an agonistic sense rather than simply antagonistic. This combination, across a heterogeneity of spaces and times, suggests ways that new types of relations can be formed through coming-together, the collective becoming of the socio-technical assemblage. For members of the *fadaiat* project this would create a different space, ‘an other territory that would connect the two shores of the Straits of Gibraltar—known as Madiaq in Morocco—through a hybridisation of atoms and bits’ (Monsell Prado and de Soto Suárez 2006: 171).

The fadaiat events

The *fadaiat* project was broad in its physical, digital, and human extents. It was a continuation of hackitectura’s earlier work in the Andalusian region of Spain, especially the *multitude connected* event of late 2003 that produced a telematic ‘space of flows’ amongst a series of internet-connected nodes throughout Europe and South America (de Soto Suárez 2005). *fadaiat* included the two main gatherings, the production of new cartographies of the Madiaq region, programming work that resulted in libre software for the streaming of both audio and visual data, and solidarity actions with local support groups and NGOs that work with the immigrant and migrant population. The first edition in June of 2004 was titled *fadaiat: transacciones*, with the subtitle of ‘freedom of movement / freedom of knowledge’, and was focused primarily on setting up the wireless data link between the south of Spain and the north of Morocco, between the Castle of Guzman el Bueno in Tarifa and the University Abdelamlek Esaadi and a terrace next to the Cafe Hafa in Tangier (Pérez de Lama, de Soto Suárez and Moreno 2005). Describing the first event, one of the main organizers, Florian Schneider, wrote,

In the small chapel of the fortress squatters from Madrid discuss with Maroccan Indymedia activists and with sociologists [sic], that are researching the shift of the border towards the south. Local refugee supporters are exchanging with womens rights activists from Larache, with community representatives from the Rif-mountains, with spokespersons from the movement of the unemployed as well as with labour leaders from the greenhouse industries in Almeira. Radio and filmmakers

are documenting, mixing, editing and sending their conference contributions in the internet. As soon as it gets dark outside, the DJ's and VJ's, musicians and performance artists take the command over the three inner wards.

The climax of the spectacle is a video conference via a wireless connection from Tarifa to Tanger, that was accomplished by the netactivists through an extra strong antenna. The small transmitting mast, that only got the official administrative permission the day before, is standing on the heighest [sic] of the four towers of the fortress and looks more like a fan. Long wires are meandering around the castle walls, run across the narrow stairways and historic castle rooms, in which the activists go into a huddle behind the screens (Schneider 2005).

The second edition in June 2005 was called *fadaiat: borderline academy*, and was more concerned with creating tactical cartographies of the straits (Monsell Prado and de Soto Suárez 2006: 229) and undertaking a 'participatory workshop [...] to design a "Strategic Plan for the Technological Observatory of the Straits"' (172). [9] This mapping of and intervention within the Madiq region was seen by the editorial team of *fadaiat* to be representative of wider global concerns regarding labor, migrancy, and geo-political configurations. 'The Straits of Gibraltar is a laboratory-territory of the contemporary world. Multiple processes coexist and combine in such a way that Migrations and Work become key words for reading the transformations taking place.' (169) Authors and presenters examined the discourse surrounding 'Fortress Europe' and the fear of invasion (Pullens 2006), questioned assumptions about borders and citizenship within contemporaneous neoliberal economies (Mezzadra 2006), considered specific issues of migrant labor within the region (Maleno 2006), and mapped the social axes of labor and production (Toret and Sguiglia 2006).

The wireless link is important not only for the symbology of a connection across the span of the Straits of Gibraltar, but also for linking this event with earlier work in pirate radio. The link itself, however, cannot be understood to immediately transform its surroundings. While much academic and journalistic discourse from the 1990s and into the early 2000s exalted the 'inherently' emancipatory power of network technologies such as the Internet and the mobile phone, an alternative set of work situated these developments within existing corporate, state, and military power structures. [10] Network technologies, in this latter view, most often reify the status quo, and the abilities and affordances of the technologies are governed not by an idealistic realm of cooperation, but rather the ideology of the market. The former position could be termed *emancipatory technological determinism*, meaning the belief that particular technologies, simply by virtue of their existence, will revolutionarily transform for the 'better' (often from the standpoint of a progressive politics) psychological and social structures. This viewpoint is profoundly ahistorical and atemporal, ignoring the role of 'external' factors in the development and spread of new technologies. [11] By

contrast, the work of Felix Guattari enables us to compare the new network technologies with previous developments, such as video, Super 8 film, and cable access television, and the corresponding malaise regarding their inability to immediately effect change. We can address the ecology of technological apparatuses by understanding their complicated imbrication with psychological, social, and environmental processes (Guattari 2008).

Transmission across the Straits

The goal: setup a WiFi data link that could enable the sending of streaming video and audio across the Straits of Gibraltar. The places: Tarifa, Spain and Tangier, Morocco, separated by around 32 kilometers (19.9 miles) over water. This distance does not approach the current 'records' for long-distance wireless data sharing using standard WiFi technology; however, the Straits are a very noisy Hertzian space with interference from myriad military installations and commercial shipping routes. Additionally, the locations are known for fierce weather including high winds, making the stability of the installation vitally important. [12] The technical information about the wireless link (Harris and Gough 2004b) goes into great detail regarding the necessary calculations, the setup of the network, questions of regulatory permission, and lessons learned. (See Figure 1 for a collage of images from the *fadaiat* book that show some of the spaces and technology involved in the creation of the link.) Resolving these significant technical challenges was necessary in order to enable the creation of participatory and collaborative media representations. The data link provided the frame for the transmissions to take place; it was a necessary, but not sufficient, element in the collectively-produced events spanning the two continents.

Coupled to the hardware data link was the need for a new type of software that enabled the easy creation of audio/visual streams. Termed Al-Jwarizmi (Al-Jwarizmi Contributors 2005)/GISS (Global Independent Stream Support) (GISS Contributors 2008), the software is partially built in Pure-Data (PD), an open platform for the real-time manipulation of data often used for live experimental media performances. (See Figure 2 for an image from the *fadaiat* book that shows some of the GISS interface and its relevance within the wider wireless data link network.) GISS allows the user to create a 'channel' via a web interface that anyone can then connect to in order to send or receive images and/or sound. As of writing there are a number of channels available that provide various types of ad-hoc Internet radio-style streams; these streams can be setup and taken down at will, providing a flexibility that is lacking in more stable types of media streaming services. In addition to *fadaiat*, GISS has been used to stream events such as the World and European Social Forums and concerts in support of the residents of Gaza. In the words of one of the developers of GISS, Yves Degoyon, the idea was to create a system to counter traditional media that 'rarely speak of

the real and daily life and problems of the common people' and open a space to 'create a human-scale media and an empathic network of human experiences in different locations of the globe' (Degoyon 2007).



Figure 1: Collage image showing the two spaces in Tangier and Tarifa. In the upper-left images, note the dish that is the Tangier node of the link. In the lower left of the collage is a conceptual map of the data networks involved in the project, including those in other countries that provided server space or solidarity events during *fadaiat*. In Monsell Prado and de Soto Suárez 2006: 50–51 and licensed under Creative Commons Attribution-NonCommercial-ShareAlike Spain 2.5.

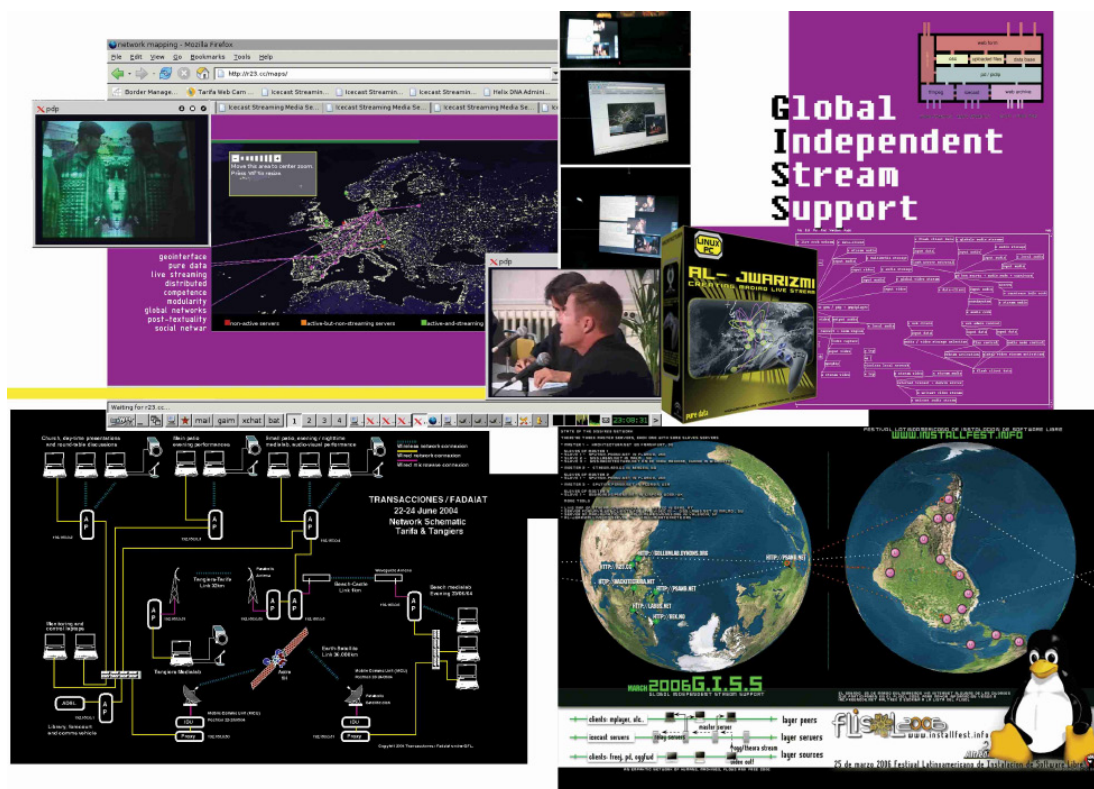


Figure 2: Collage image showing some of graphics relevant to the GISS component of the *fadaiat* project. In the lower left is the network diagram for the entire wireless data link. Note in the lower right image the reference to the upside-down map of South American by the Uruguayan artist Joaquín Torres-García; this tactic of rotating or reflecting maps is used extensively within the *fadaiat* book as a way of destabilizing our views of cartography.

For *fadaiat* 2004, GISS enabled people to communicate via representations of their own making and via a non-commercial link setup by their own labor. GISS was the glue that enabled conversations, presentations, and a rave to take place across the Straits and beyond. The development and spread of GISS post-*fadaiat* speaks to a desire for communication tools that serve the needs of the community rather than commercial stakeholders. In contrast to closed commercial products such as Skype, GISS enables independent multi-way conferencing and media sharing, and so an alternative way of experiencing communications media. GISS does require a certain amount of technical knowledge to run; however, this knowledge is not proprietary and owned by a singular entity, but can instead be shared with others via channels such as GISS itself. Unlike a

closed-source, black-box program like Skype whose inner workings are hidden from view, GISS rewards the effort needed to make it work, drawing the user into both a wider space of experimental media technologies as well as a community of people eager to share their knowledge.

Important for *fadaiat* and *hackitectura* is the understanding that GISS is not to be used in only an instrumental sense. It does not exist solely for the rational discussion of immigration in the context of the *fadaiat* events. In addition to this use, or alongside it, is the expression of collective desire through parties and raves. Indeed, imagery from the project (Monsell Prado and de Soto Suárez 2006: 42–45) links it to the rave culture of the 1990s, and especially the spontaneous expression of *jouissance* that was channelled through the Reclaim the Streets (RtS) movement. [13] RtS eschewed rational discourse that merely talked about alternative use of public space; rather, they performed their desire through the creation of mass parties in open spaces and roads throughout cities in Europe and North America. The linking of *fadaiat* to this history, and the use of GISS to create a telematic space of celebration, continues the embodied expression of desired alternatives.

Pirate radio and technological apparatuses

In his 1932 essay 'The Radio as an Apparatus of Communication' Bertolt Brecht wrote of his concerns about the development of radio, shortly before Joseph Goebbels' well-known speech regarding radio as a tool of propaganda (Goebbels 1999). In Brecht's view, 'radio is one-sided when it should be two-. It is purely an apparatus for distribution, for mere sharing out' (1964: 52). Radio was becoming a 'substitute' for other forms of media (such as theatre, concerts, and the opera) rather than a medium in and of itself, rather than an expressive space that utilised the unique properties of the technology. His suggestion was to call for a conceptual shift: to see the radio as a means of communication (in the two-way sense) rather than distribution (in the one-way sense). Since radio (by wireless transmission) can carry sound from one central location to a variety of peripheral locations, why could it not also carry the thoughts and affect of individuals and collectives to wider audiences? This would not be merely a 'renovation' (in Brecht's words) of ideological apparatuses, but rather an 'innovation' that would be a radical rethinking of the relationships between people and the state, away from fascist paternalism and towards a more communist orientation. Brecht's entreaty, while technologically ambitious, was not entirely outside the realm of possibility, and underpins the argument that technological development does not occur in the abstract, minus the influence of existing institutions, but is rather shaped and partially determined by present powers. [14]

So if radio did not renovate ideological apparatuses as Brecht desired, what about other mass media technologies of later decades, such as Super-8 film, video, or cable-access television? Félix Guattari asks this very question in his essay 'Popular Free Radio', suggesting that one of the reasons why these other technologies had not taken hold had to do with the mechanics of the technologies themselves: 'with video and film, the technical initiative remains, essentially, the object of big industrial enterprise; with free radio, an important part of the technology depends on the improvisational ability of its promoters' (Guattari 1996 [1979]: 73). [15] What Guattari is hinting at here is the ability, with radio, to build transmitting apparatuses with a minimum of parts, and to hide transmission antenna in a variety of inconspicuous locations. Additionally, broadcasting rigs can be moved rapidly and replaced quickly in the case of a raid by the state. Free radio becomes a nomadic technology, temporarily located within a particular space but not essentially rooted to it, able to be transferred as circumstances warrant. While Super-8 film or video can also be mobile, the immediacy of the temporal is lost, meaning, the ability to speak or act back to the transmitter during the transmission. These other audio/visual technologies required extra time, a duration that did not match the duration of an event or transmission. [16] This embedding of free radio within the immediate moment enabled a type of proaction/reaction that was not available with the other technologies.

Not that this was an ontological given, however. Guattari realised the contingency of technological development on the activities of state and commercial entities, with the resulting myth that the choices were 'inevitable': 'today one has a tendency to base the legitimacy of this choice on the nature of things, on the "natural" evolution of the technology' (Guattari 1996 [1979]: 74). This understanding of the ways in which ideologies become a component of technological apparatuses parallels then-concurrent research within film studies regarding the ideological constructs of cinema. The close up, deep focus, techniques that were 'assumed' to be inevitable and neutral, were shown to be part of a wider process of signification with historical roots in existing, mainstream ideologies. Jean-Louis Comolli is clear in this respect when he talks about the desire of some film theorists to discover the 'first' instance of a particular technique like the closeup:

As soon as one interprets a technical process 'for its own sake' (i.e., 'the first traveling shot in the history of the cinema') by cutting it off from the signifying practice where it is not just a factor but an effect (i.e., not just a 'form' which 'takes on' or 'gives' a meaning, but itself already a meaning, a signifier activated as a signified on the other scene of film, its outside: history, economy, ideology)—it becomes an ahistorical temporal object. With a few minor adjustments (technical perfecting) it can wander from film to film, always already there and always identical to itself ('a closeup of the boss and a closeup of the worker are both a closeup') (Comolli 1986 [1971]: 430).

The ontological flattening of class difference of which Comolli writes is an ideological effect of not only the technical use of similar closeups, but also of film theoretical discourse that collapses the two types of closeups into the same object. Closeup as signifier is always already a signified when we make the assumption of its supposed technological (and thus ideological) neutrality. 'The technical ideology insists on setting technical practice apart from the systems of meaning, presenting it instead as the cause producing effects of meaning in a film text, and not as itself produced, itself an effect of meaning in the signifying systems, histories, and ideologies which determine it' (Comolli 1986 [1971]: 432). Along these same lines, Jean-Louis Baudry wrote of the ways that the filmic apparatus, as contemporaneously constructed, erases the productive forces necessary for its creation in order to form the illusion of a complete and continuous subject: 'The search for such narrative continuity, so difficult to obtain from the material base, can only be explained by an essential ideological stake projected in this point: it is a question of preserving at any cost the synthetic unity of the locus where meaning originates [the subject]—the constituting transcendental function to which narrative continuity points back as its natural secretion' (Baudry 1974: 44). This 'narrative continuity'—and therefore the creation of the subject—can only occur insofar 'that the instrumentation itself be hidden or repressed' (44).

Thus there are (at least) two ways in which the technological apparatus is not neutral: first, in the suggestion that it could function differently and enable expanded forms of affect; and two, in the ways in which it constructs subjectivity, and the possibility and limitations of that subjectivity as a result of the apparatus. We have already seen this obliquely in the writings of Brecht on radio. Following Brecht, Guattari too requires that free radio provide a two-way communications link that 'permit[s] the establishment of a veritable feed-back system between the auditors and the broadcast team' (Guattari 1996 [1979]: 74). Radio can function differently, and by functioning differently it can potentially create more open forms of subjectivity. Free radio therefore needs to be seen less as a means of transmission, and more as a process of (re-)transmission, where the feed-back is not closed upon itself but rather remains open to those normally left out of the corporate- or state-controlled media loop, a loop that is closed to many forms of desire or 'direct speech' in Guattari's words. For Guattari sees this open loop as a means of expressing desire and foregrounding new processes of becoming:

Direct speech, living speech, full of confidence, but also hesitation, contradiction, indeed even absurdity, is charged with desire. And it is always this aspect of desire that spokesmen, commentators, and bureaucrats of every stamp tend to reduce, to filter. The language of official media is patterned on the police languages of the managerial milieu and the university; it all gets back to a fundamental split between saying and doing according to which only those who are masters of a licit speech have the right to act. (Guattari 1996 [1979]: 76)

Free radio would not just be for the rational discussion of issues at hand, but would rather be a space for the unexpected, where, in the case of Italian free radio, 'very serious debates are directly interrupted by violently contradictory, humorous, or even poetico-delirious interventions' (75). This is a rejection of the ideologies of mainstream politics, as well as the politics of the traditional left, that require sober contemplation and argumentation that minimizes affective outbursts.

Broadcasting from a kitchen table

Guattari's comments are imbricated with his relationship with Radio Alice in Bologna, Italy, a pirate radio station that was associated with the autonomism movement in Italy in the late 1970s. [17] Going on the air on February 9th, 1976, Radio Alice came at a time in Italian politics of growing militancy on the left as a result of state oppression in response to protests against the 'historical compromise' consisting of the ruling Christian Democrats and the Italian Communist Party, which many on the far left saw as a move designed only to continue the instantiation of neoliberal capitalism and the maintenance of the status quo. [18] Radio Alice existed not only to provide information about events on-the-ground in Bologna through phoned-in comments, but also to explore alternative means of speech, much as its namesake experienced in Lewis Carroll's *Alice's Adventures in Wonderland*. In the words of the collective behind Radio Alice, Collective A/Traverso, 'The body, sexuality, the desire to sleep in the morning, the liberation from labor, the possibility to be overwhelmed, to make oneself unproductive and open to tactile, uncodified communication: all this has for centuries been hidden, submerged, denied, unstated' (Collective A/Traverso 2007: 130). Radio Alice was shut down by the *carabinieri* on March 12th, 1977 and they subsequently made arrests for 'delinquency and subversive association' but were unable to find the station's founder, Franco 'Bifo' Berardi (Dosse 2010 [2007]: 288). Bifo had earlier read Guattari's *Psychoanalysis and Transversality* and his work with Deleuze, *Anti-Oedipus*; in fact, both books were key for those involved with Radio Alice (Berardi [Bifo] 2008: 145). Fleeing his arrest warrant in Italy, Bifo made his way to Paris and Guattari's apartment on rue de Condé. Guattari, whose home was well-known as a safe place for activists to stay, learned of the Italian situation, and specifically Radio Alice, through his hosting of Bifo. When Bifo was arrested by French authorities and put on trial in preparation for extradition to Italy, Guattari formed the *Centre d'Initiatives pour de Nouveaux Espaces Libres (CINEL)* (Center for Initiatives for New Free Spaces), an organization 'designed to ensure the defense of prosecuted activists' (Dosse 2010 [2007]: 290). Also involved in the founding of CINEL were Eric Alliez and Gilles Deleuze. CINEL would also be key in supporting Antonio Negri during his incarceration in Italy starting in 1979 (296–300).

Guattari would write in a preface to the French publication of the works of Collective A/Traverso:

Alice. A radio escape line. A whole engagement of theory—life—praxis—groups—sex—solitude—machine—affection—caressing. No more of the blackmail of 'scientific' concepts. [...] The people who created Radio Alice would say something like this: it seemed to them that a movement that could succeed in destroying the vast capitalist-bureaucratic machine would, a fortiori, be capable of constructing a new world. Collective competence would grow with collective action; it is not necessary at this stage to be able to produce blueprints for a substitute society (Guattari 1984: 238, 241).

In the words of Michael Goddard, for Guattari, 'Radio Alice was not an instrument of information but a device for deconstruction of the mediatic system aiming for the deconstruction of the social nervous system' (Goddard, n.d.). If Radio Alice had only existed as a means of rational discourse, if it only allowed transmission instead of re-transmission, it could only have consisted in maintaining the ideology of passive reception and the acceptance of existing structures. What interested Guattari in Radio Alice instead was its opening for the 'deconstruction' of the social order, and the possibility that it could be re-created or performed, live, in a temporality of its own participants' choosing, and for purposes of experimentation and becoming rather than ingestion and acceptance.

Free radio in France faced state repression as well, but not to the extent experienced in Italy. Nevertheless, via transmitters smuggled in from Italy, Guattari helped found Radio Tomato with other CINEL activists in 1980, with early broadcasts originating from his kitchen table (Dosse 2010 [2007]: 304). Radio Tomato broadcast news programs and cultural programming, as well as debates on events in Poland, Lebanon, Israel, and Palestine. [19] In his monumental account of the individual and joint work of Deleuze and Guattari, François Dosse writes that, 'This airwave experiment corresponds to a practical extension of Deleuze and Guattari's ideas. It is a model of a transversal rhizomatic system that breaks with State- and market-based vertical logics' (Dosse 2010 [2007]: 304).

Scanning the Satellite Airwaves

What is apparent from the preceding discussion is desire manifested in exploring the fringes of particular technological configurations. Rather than taking what was given,

free radio supporters, following Brecht, set to recreate the telematic by implementing what was possible-but-not-yet-existing. By actualising these models, free radio practitioners constructed new spaces for the expression of affect, at the same time critiquing the structure of the existing ideological apparatuses. Similarly, those with satellite signal receivers in the 1980s and 1990s were able, if suitably interested, to capture feeds that existed in the proverbial aether but were not meant for public consumption. At this time satellite signals were sent unencrypted, meaning that they could be watched and captured by anybody with the right tools. These signals also consisted of excesses that were not normally seen within the confines of standard television programs: off-the-cuff comments of interviewees, the repetition of subtly different interviews to geographically disparate locations, the creation of on-air personalities through the actions of handlers. The American documentary filmmaker Brian Springer gathered hundreds of hours of these sorts of feeds for his documentary *Spin* (Springer 1995). Drawing from material in the turbulent year of 1992, with the American presidential election, Los Angeles riots, fights over reproductive rights, and the 500th 'anniversary' of Christopher Columbus' arrival in the 'new world', *Spin* shows the satellite feed in its 'raw' form, prior to its manipulation and splicing for the purposes of broadcast. The technological apparatus is laid bare through the capture of and re-presentation of the feed. Gone are the mixing tables, the teams of editors and producers that take the 'raw' audio/visual feed and turn it into something for consumption. The film theorist Patricia Zimmerman has written with respect to *Spin* that, 'In these feeds, the performative mode of television, which packages news and sanitizes private discourse, recedes. *Spin* crawls between the interstices of television, the space of live, nonstop satellite hookups in between national and international broadcasts, in effect, working the seams rather than the programs' (Zimmerman 2000: 175). The borderlands come to the fore, challenging a media culture where images are transformed within closed editing booths and then re-transmitted to an absorbing public with no possibility of meaningful response.

Similarly to Springer's work, the activities of the Slovene artist Marko Peljhan and his *Makrolab* (Zavod Projekt Atol 2003) project opens up a space for critiquing the control of wireless spectra by corporate, state, and military entities. *Makrolab* exists as an autonomous structure of Space-Age design, a silver-clad angular cylinder meant to evoke at once the heralding of a clean future as well as the fear of atomic annihilation and the subsequent need for hardened shelters. Within *Makrolab* are a series of workspaces meant to provide visitors (other artists, scientists, or exhibition guests) with the ability to 'scan' the space of telecommunications signals. Much as with *Spin*, the idea is to work at the borders of legality, examining wireless transmissions that are not meant for public perusal. [20] In the words of choreographer and media theorist Johannes Birringer, *Makrolab* 'can gather information about valuable data concerning security, the environment, weather, health, economic and financial transactions, political conflicts, and scientific research. In doing the kind of observation and analysis generally conducted by institutional, private, and state monopolies, *Makrolab* takes on a counter-position, a heterotopic praxis of "information gathering" that

extracts valuable data from supra-individual, corporate, and transterritorial networks' (Birringer 1998: 71). *Makrolab* becomes a testing ground for developing novel relationships to the telematic spectrum, relationships that are formed out of self- or group-interest rather than because of the market: 'Tinkering with the toolbox of net technologies and opening alternative channels of interaction and exchange (the "gift economy" of net activists), such tactical initiatives imply economic analysis of corporate logistics on one hand, and new forms of self-organisation, group-ware channeling, and non-profit models of decentralised public-access connectivity on the other' (73). Brian Holmes further connects *Makrolab* with Peljhan's own upbringing within a Slovenia that quickly went from a member of the Republic of Yugoslavia to a nation entering the neoliberal milieu, a change that resonates in certain ways with Spain's own movement from fascist dictatorship to capitalist democracy fifteen years earlier: '...within a device that encapsulates certain aspects of the Slovene experience, fragmented images from a wider variety of vanguard projects can knit together into complex sensorial refrains, interrupting the normalised modulation of time imposed by the commercial and military cultures of transnational capitalism, and loosening up subjectivity for original work with the most challenging scientific and symbolic material, at variance with the dominant patterns' (Holmes 2007).

But lest I give the impression that tinkering with the 'raw' feed is the only means by which new subjectivities are formed, I want to consider another example. In a different context the 'sanitized' feeds themselves—indeed those that are constructed by media networks and received by a willing public—can become a means of emancipation, according to the Moroccan feminist and sociologist Fatema Mernissi. According to her ethnographic research, the wide availability of satellite dishes in Morocco has enabled a certain type of 'conversation' to take place regarding the role of women in society due to the presence of female hosts on channels such as al-Jazeera discussing such topics as 'sexual inadequacy'. The ability for the satellite signal to reach into every home made this a communal experience in ways that the Internet currently does not provide: '[satellite broadcasting] creates the highly political public space where the entire community is gathered to debate vital issues. By contrast, the internet, which is basically more of an individual experience, does not have that theatrical public dimension, so central to Islam, where the sexes are not supposed to have the same access and the same behavior' (Mernissi 2004: section 3). Because of the ubiquity of satellite dishes, and the signal's omnipresence in the air, experiences and conversations can be had between the sexes that are not possible in other types of spaces. This has proven controversial for the traditional notion of the *umma*, or Muslim community, that forms the fabric of Islamic society. The ubiquity of satellite television has forced changes to the structure of the *umma*, precisely because of the technological reach of its wireless feed. [21]

Returning to the data feed

How do the discussions of pirate radio and the satellite feed relate to the work of hackitectura at the *fadaiat* event? The live wireless data transmission that linked Tarifa and Tangier is a reconfiguration of the concept of feed from both pirate radio and satellite television. On the one hand, the *fadaiat* feed could be watched passively by electronic visitors to the website during the event. The feed would appear to them as nothing more than a standard presentation of any other 'live' event. Visitors from various locations around the world could view the event even if they could not be physically co-present. On the other hand, people could involve themselves in the feed via a process of re-transmission. Neither Tarifa nor Tangier was more of a 'prime' node than the other, meaning that transmissions (or re-transmissions) could occur from either location. GISS enabled the streaming of experiences in both directions, in full duplex. Rather than talking amongst each other in front of a screen obstinate to any form of interaction, *fadaiat* participants could re-act 'in real-time' to what was taking place on the other side. In light of the geopolitical relationship between Spain and Morocco (their intertwined histories, their positions on the continents of Europe and Africa, their uneasy relationship to the presence of Great Britain at their backdoor) this opening of possibilities should not be underestimated. While live links between two geographically separate locations had occurred for artistic purposes in the past (most notably with *Hole in Space* (1980) by Kit Galloway and Sherry Rabinowitz), the fact that the link used for *fadaiat* was created by the participants themselves needs to be noted. Control of the feed remained with the organizers of *fadaiat*, meaning that content decisions remained solely in their hands. No-one could tell them to cut the feed; no-one could force them to switch to another camera. The control of the infrastructure and the technological apparatus gave them control over what could be said—and gave them the opportunity to give up content control altogether.

So this was not just a performance of televisual liveness, as Jane Feuer argues in her well-known essay (Feuer 1983); events are not being constructed temporally-prior in order to make it appear as if the event were happening live. Yet the participants in *fadaiat* would appear to be under no false pretences that their own live event is somehow ontologically prior or pure: the representations are, in a certain sense, mediated in similar fashions to those of corporate or state media. The frame remains the same shape (albeit somewhat smaller than normal because of limitations on network bandwidth) and cameras are still placed in relatively standard positions. Nevertheless, authority remains in their hands; control of who and what gets shown, where and when the images appear, and, most importantly, why the event takes place remains local. Participants wrest power over self- and collective-determination from the authorities. The participants in *fadaiat* thus move in a different space than mere critique of dominant ideologies. The creation of the wireless link is itself both a comment on the regulation and control over the telematic spectrum and

a means of performing an alternative configuration of these technologies, a configuration that foregrounds the desire of individuals and collectives to decide upon their own forms of discourse and their own means of representation.

Ethico-political subjectivity across the straits

I want to finish by tying the work of *hackitectura* in the *fadaiat* project to wider concerns about the formation of subjectivity within an ethico-political domain. This discussion draws heavily from the theoretical accounts of Guattari in *Chaosmosis*, his last published book and one in which the technological plays an important role. His examination of the production of 'minority becomings' via new processes of subjectivity, partially constructed by technology, came to the fore in *Chaosmosis*. Important for my discussion of *fadaiat* is Guattari's insistence on including the technological in any discussion of a post-media ecosophy. Counter to certain strands of thought that would see in (presumably modern) technology only the forces of domination and capitalist control, Guattari suggests that 'Technological developments together with social experimentation in these new domains are perhaps capable of leading us out of the current period of oppression and into a post-media era characterised by the reappropriation and resingularisation of the use of media' (Guattari 1995: 5), making specific reference to the potential for 'interactivity between participants' (6) and thus suggesting a potential link between these new technologies and his earlier comments about free radio.

Guattari is careful to distance his approach from one that would posit a transcendental, universal Subject that exists prior to modes of signification. Subjectivity, therefore, is not meant to create a Subject in the image of something that already exists. Yet this distaste for the universal Subject does not mean that we should turn to 'conservative reterritorializations of subjectivity' (Guattari 1995: 3) that make calls for actualizing what is already known but not presently existing (ethnic groupings, certain types of identity politics), that would ultimately reflect previous forms of subjectivity only in the guise of seemingly new subjects. Nor is the formation of subjectivity based on linguistic signification alone. Guattari is as interested in non- or pre-discursive modes as he is in speech. He is wary of how both Capital and the 'conservative reterritorializations' can lead to retrograde movements of subjectivity: 'Subjectivity is standardised through a communication which evacuates as much as possible trans-semiotic and amodal enunciative compositions' (104). By focusing on only one modality for subjectivity we would close ourselves off from alternative 'enunciative compositions' that create subjective reconfigurations hitherto unknown. It is within the potential of the 'trans-semiotic and amodal' virtual that we can conceive of and perform different forms of living. This is key for my consideration of free radio and the work

of the *fadaiat* project. Nowhere within *fadaiat* was there a limitation of the project to only the linguistic, only the rational presentation of facts and accounts. Rather, *in addition to this* was the expression of affect, the playful, the non-rational as molecular components of an increasing sum, individual elements yet part of a whole that we can speak of as *fadaiat*.

There is here a certain generative productivity at work that is lost within traditional accounts of technological use. Within this discourse the technological is seen as a means to an end, a mere tool for the completion of some task. Yet the economy in the *fadaiat* project—within its social-technical assemblage—produces a different type of efficiency, an efficiency towards the subjective via its representational and performative aspects. The specific social and technical configurations open opportunities for reaching certain types of enunciations that would be impossible within traditional arrangements of rational social and technical systems. In talking about the power of poetic discursivities, Guattari writes that, ‘Its efficiency lies in its capacity to promote active, processual ruptures within semiotically structured, signification and denotative networks, where it will put emergent subjectivity to work’ (19; my emphasis). This type of efficiency is not that of a rational politics, nor of a belief in the telos of a given technology; signification is too intransigent for these techniques. Rather, poetic discursivities provide a more direct way to cut through the power of existing semiotic networks via an ‘ethico-aesthetic paradigm’ (to use the subtitle of *Chaosmosis*) that, partially because of its bastard status as a strategy, can create the ‘ruptures’ needed for the expression of something novel. [22]

Consensus politics this is not, and it intertwines with Guattari’s own political experiences with Bifo and Radio Alice in Bologna, among many other activities. Specifically, the Italian left experienced in the 1970s the ways in which Parties could turn on their members, most notably in the coalition government of the Christian Democrats and the Communist Party, a coalition designed to hold the status quo in a barely-stable state. According to Michael Goddard, ‘what is behind this polarisation [of the Italian left] was the emergence of a new regime of consensus or control in which all previously existing forms of resistance such as trade unions or the communist party would be tolerated provided they fit into the overall regime of consensual control, for which they provide very useful tools for subjective reterritorialisation’ (Goddard, n.d.). Suggesting or embodying alternatives to the allowed institutions (such as what Radio Alice did) resulted in massive state repression. Nevertheless, the members of Radio Alice, along with Guattari’s CINEL colleagues, worked to create alternative networks of people and collectives that expressed new means of working against injustice and towards a different present-future. With *fadaiat*, we see one actualization of this: by creating their own network infrastructure, by spreading their work via libre software and a freely downloadable book, by building networks of solidarity with both local groups and more geographically-dispersed organizations, *hackitectura* and the members of the *fadaiat* project are engaged in the marshalling the ‘trans-’ of which Guattari writes. Trans-

semiotic, trans-border, trans-media. Consensus works on the assimilation of everything into the 'intra-', while agonism or non-consensus requires an affirmation of the 'trans-'. This does not rule out a collective politics; rather, collectivity can be understood as beyond and before the individual (Guattari 1995: 9) and thus respectful of both individuals' and collectives' abilities to self-determine their own subjectivity absent the force of an unifying institution.

Subjectivity in this sense is not naively utopic, for it does not deny the power of trans-national capitalism and neoliberal economic policies, nor does it require a *tabula rasa*. What it does deny is a purely rational response that rules out the subjective force of individuals and groups. And it denies that this form of subjectivity should only be a response, a post-hoc action that takes as given the pre-existing, the past. Rather, it is productive in a way that is temporally oriented towards the present-future, with the knowledge that such words as 'present' and 'future' should not be seen as bounded terms but rather refer to multiple overlapping temporalities of duration that, put together, articulate potential spaces of action and creation. It is a movement away from, in the words of Goddard, the 'deadening of relationality, affect and desire in the direction of pure functionality and aggressivity' (Goddard, n.d.). Performance of subjectivity like that observed in *fadaiat* is rather a repudiation of the ideology of functionality and a discarding of an unwavering belief in institutional politics. *fadaiat* suggested a different type of ethics, one that draws on the capacity of people to create and come together under their own volition. 'There is an ethical choice in favour of the richness of the possible, an ethics and politics of the virtual that decorporealises and deterritorialises contingency, linear causality and the pressure of circumstances and significations which besiege us' (Guattari 1995: 29). With *fadaiat* and the work of *hackitectura* we see a strong argument against the status quo and the call for a new way of approaching not only immigration, but also ethico-political action as a whole. Aspects of the virtual become actualized creating molecular revolutions that, combined across a multitude of temporalities, generates a reconfigured world founded on mediated relationships that bring lived experience to the fore. The temporary autonomous zone of *fadaiat*—a zone that refracts not only the pirate enclaves of old, but also the free-trade zones of the Kingdom of Spain—is a micro-revolution in and of itself, a series of points within a growing multitude of temporal events that, *en masse*, form a counter to the power of neoliberal globalization and a manifestation of a new potential state of the world. [23]

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Notes

[1] The word *fadaiat* is an Arabic word meaning 'spatial objects' or 'through spaces' and is often used to refer to satellites as well as space ships. See Monsell Prado and de Soto Suárez (2006: 219).

[2] While my references to pirate radio will primarily come from the late 1970s and early 1980s, I do not want to ignore the plethora of pirate radio stations that remain broadcasting throughout the world, flittering in and out of existence as circumstances allow.

[3] *hackitectura* dissolved in early 2011 after existing for a decade.

[4] Key texts outlining the theory and practice of hacktivism in the sense of electronic civil disobedience can be found in Critical Art Ensemble (1994, 1996). Such practices can also be related to the history of a more narrow form of hacking within computer culture, hearkening back to the days of phone phreaking. For one of the most well-known statements see The Mentor (1986). Such practices have one contemporary manifestation within the activities of Anonymous or LulzSec; for an anthropological take on their actions see Coleman (2011).

[5] Free/libre/open source software (FLOSS) refers to the development and release of software tools along with the human-readable source code, meaning the text of the computer instructions that can be understood by a programmer or hardware designer, rather

than the binary machine code alone that can only be run by the computer and not easily understood by a human. Free software advocates consider this a fundamental freedom of computing, suggesting that all should have the ability to know how programs are written. This is in contrast to commercial development of software, where the source code is often considered a trade secret or proprietary intellectual property. Debates regarding this spectrum have occurred throughout the history of digital computing with FLOSS becoming more and more prominent over the past decade. Free software is customarily developed in a collective, decentralized fashion with programmers collaborating in a geographically-dispersed manner. For recent anthropological accounts of the development of FLOSS see Coleman (2004); Coleman and Golub (2008); Keltly (2008). *hackitectura* specifically align themselves with the free/libre side of FLOSS, which stresses the ability to share and distribute computing knowledge, rather than the open source side, which in contrast stresses the economic benefits of efficiency that come with having the source code available.

[6] Important to note here is that this libre software does not merely replicate in a mimetic fashion the capabilities of existing commercial products; rather, it contains potentials and capabilities that would not be possible if the whims of the market or stockholders were the final arbiters.

[7] Indymedia began as a means of reporting on the protests at the 1999 WTO meeting in Seattle, Washington, USA, where activists created an online platform for the spread of tactical information, news, and commentary that bypassed mainstream corporate media sources. Indymedia sites are well known for allowing anyone to post information on their 'news-wire', an important tool that is widely used by protesters during fast-moving events. Since then, Indymedia has expanded to over a hundred 'nodes' around the world, with each node governed independently and presented using whatever local language(s) is/are necessary. Indymedia thus exists as an assemblage of material relationships consisting of geographically-specific collectives, as well as a software platform that enables a form of 'citizen journalism' via technologies such as the mobile phone and the Internet. There are additionally Indymedia nodes that focus on audio via online and terrestrial radio (<http://radio.indymedia.org/>), linking Indymedia to a longer history of pirate and participatory radio. For more on the history of Indymedia see Juris (2008: 267–286) and Milberry (2003, 2009), and for its software development see Hill (2003).

[8] It is important to recall that the word 'network' has as its first definition one that highlights qualities of materiality, corporeality, and the production of textiles. See Oxford English Dictionary (2012).

[9] Workshop notes prior to this event discuss 'mapping games', potential connections with local organisations in Morocco, as well as a band that could perform during the event; see chaser (2005).

[10] See, for example, Galloway (2004); Galloway and Thacker (2007); Terranova (2000).

[11] Yet it is easy to understand if we consider the cybernetic practice of 'black-boxing', where complicated systems can be reduced to simple relationships of inputs and outputs, and where other factors are abstracted into the background. Research in science and technology studies have worked extensively to 'open' the black box of the creation of facts and artifacts in order to counter Whig histories of development. See, for example, Pinch and Bijker (1984); Winner (1986); Latour (1987); Winner (1993); Nieuwsma (2004).

[12] This is due to the need for 'line-of-sight' access, meaning that one side needs to be able to 'see' the other side via a straight imaginary line. Thus, any movement of either installation (due to high winds) could potentially knock out the signal.

[13] For an account see Klein (2000: 311–324). Pirate radio was also key to the spread of dance music beginning in the 1990s; for a contemporaneous description of pirate radio in the UK see Fuller (2005: 13–53).

[14] For more on the development of radio in America, and especially the role of amateur transmitters and their relationships with corporate and state entities, see Douglas (1987); for the particular case of the American Radio Relay League, see David (2008: 136–190). Radio and its pirates developed differently in other countries in Europe; for a history of these relationships in Great Britain see Johns (2011). In Japan Tetsuo Kogawa has been instrumental in the development of a 'micro-FM' movement that takes advantages of both legal loopholes and the density of living within Tokyo; see Kogawa (1990, 2003).

[15] Guattari unfortunately ignores the importance of the Sony Portapak technology to feminist artists throughout the world and in France specifically; see Jeanjean (2011).

[16] While live television existed, it required access to the 'big industrial enterprise' that Guattari decried.

[17] As François Dosse notes, Guattari's family had roots in Bologna; how much of this can be said to have affected Guattari's connection with Italian activism is unclear. See Dosse (2010 [2007]: 22).

[18] For much more on the development of autonomism in Italy in the 1970s see Wright (2002).

[19] See Michael Goddard's recent article (2011) in *Fibreculture* for more on Guattari's experiments with radio in France.

[20] Indeed, at its unveiling during Documenta X in 1997, Brian Springer was present as an on-site consultant.

[21] For examples of this reconstitution of publics within the context of blogging in Egypt and Tunisia, see Otterman (2007) and Elian (2011).

[22] For a similar argument on the need for progressive activists to understand the power of affect and fantasy, see Duncombe (2007).

[23] To end by joint references to temporary autonomous zones and pirate enclaves is to recall the importance of the Madaiaq region (and the Mediterranean in general) to Peter Lamborn Wilson's notion of 'pirate utopias' and specifically the Republic of Salé on the Atlantic coast of north Africa, not far away from the Straits of Gibraltar (Wilson 1995). Such historically-existing enclaves were key for the development of the temporary autonomous zone concept as mediated by Wilson's moniker Hakim Bey (Bey 1991). All this is to further note the importance of reactivating older temporalities in the present as necessary.

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FCJ-141 Spaces for Play – Architectures of Wisdom: Towards a Utopic Spatial Practice.

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There still exist – and there may exist in the future – spaces for play, spaces for enjoyment, architectures of wisdom or pleasure. In and by means of space the work may shine through the product, use value may gain the upper hand over exchange value: appropriation, turning the world upon its head, may (virtually) achieve dominion over domination, as the imaginary and the utopian incorporate (or are incorporated into) the real.

Henri Lefebvre, 1991 The Production of Space, 348.

Introduction

This paper proposes a Utopic Spatial Practice that seeks to rehabilitate utopianism in a digital age. Such a Utopic Spatial Practice might utilize the practices and technologies of locative media to more fully realise utopia as a specifically spatial form. It might also harness locative media's potential as a dynamic mechanism for radical social transformation. These technologies plot media to geographical coordinates, so that, via mobile devices, virtually experience can come into real world spaces. This provides scope for an artistic practice that relocates the 'no-place' of utopia in the midst of the here and now. By superimposing speculative other-worlds on real-world spaces, and thus creating incongruity within the same space, a Utopic Spatial Practice would seek to instigate a critical dialectic between *virtual* and *real* to create what Henri Lefebvre imagined as alternative 'spaces for play' and 'architectures of wisdom' (1991: 348).

To pit the *virtual* and the *real* against each other in this way may appear a perverse and rather regressive step, particularly in relation to locative media. Its technologies and practices have shifted digital encounters away from the desk-bound screen, where the virtual was much more readily understood as 'a space apart' (Dourish, 2006), and out into the material world, where there is 'a clear articulation between the physical and the informational' (de Souza e Silva & Sutko, 2011: 24). To elaborate, these technologies and practices include the use of GPS-enabled mobile devices to tie information and media (text, images, sounds) to the geographical location of the user. These have been employed to guide users to locations of interest and attach additional information to these locations (directions and reviews for a restaurant, for example), as well as to augment the user's experience of a specific site (through history and heritage applications, for example). They have also enabled the development of location-based social networks (through applications such as Loopt and Foursquare) and, for many, have become an everyday part of urban experience, supplemented by other technologies that place information into the environment through urban screens, RDF tags, QR codes, Bluetooth, and so on. These developments have also provided opportunities for artists to variously augment the experience of place and to instigate playful encounters with real spaces through the creation of virtual fictional scenarios (as in the case of location-based mobile games). All of these developments, which together I describe as 'locative media', have led to a blurring of the boundaries between the categories of 'virtual' and 'real', in place of which discussion has revolved around notions of *hybrid*, *mixed*, or else *augmented*, realities.

Whilst acknowledging that *hybridity* now more accurately describes the experience of users on the ground, this paper makes the case for artists working with locative media to retain some notion of the virtual as 'a space apart'. While locative media artists have long made claims about the radical potential of their work, locative media's ability to intervene in and transform urban spaces (McGonigal, 2010; Flanagan, 2009: 204; de Souza e Silva & Hjorth, 2009: 608), it is difficult to see what *difference* these interventions might make when the real and virtual are collapsed into the *same* space. The radical *potential* of such interventions becomes confined to the quotidian tactics of users on the ground, drawing on the *possibilities* contained within pre-configured sets of computational data (what Adriana de Souza e Silva and Daniel Sutko (2011: 25) refer to as a 'technological virtual'). By restoring to virtuality the sense that it creates potential through the production of difference and therefore multiplicity, as explored in the philosophy of Gilles Deleuze and developed in Pierre Levy's account of the processes of *virtualization* (Levy, 1998), we might begin to more fully realise the radical potential of these spatial practices. Real and virtual should be seen as distinct not in terms of a separation between material and informational elements but by virtue of the different world views they present. It is proposed that Utopia offers a model for creating such a distinction because of the way it constructs an other world as a coherent space – a virtual 'space-as-it-might-be' in contradistinction to 'space-as-it-is'. In building such imaginary spaces and thus creating new sites for social experimentation, locative media

technologies and practices provide powerful tools for introducing new layers of meaning that are geographically aligned with, but conceptually distinct from, existing real-world spaces. Rather than producing an *augmented reality*, however, a Utopic Spatial Practice would conspire to bring about a confrontation between *different realities*, strategically creating incongruity, rather than seamless user experiences, to prise open a space between worlds in which social, political and personal transformation might be achieved.

In addition to reconfiguring our understanding of the relationship between the virtual and real, pursuing this unlikely relationship between the elderly, predominantly literary form of utopia and the juvenile digital practices of locative media has a number of other consequences which will be explored throughout this paper: it suggests a much stronger notion of authorship than we have been used to; it argues for a more serious engagement with the complexity of existing (material, social and informational) spaces and for a strategic/global rather than tactical/local response to this complexity; it forces us to distinguish between virtual worlds that are dynamic and potential-generating and those that offer only an escape into fantasy; and it suggests that there are older traditions of spatial practice, architecture for one, that we might usefully draw on.

From the start, it must be acknowledged that this paper is often as speculative and rhetorical as the methods and approaches that it proposes, and therefore leaves many questions unanswered and paths to be pursued. As with utopia, this sketch for a Utopic Spatial Practice may be read as a plan of action, a critique of existing practices, or as a catalyst for novelty and the creation of potential. It is also wise to acknowledge from the outset that utopianism has been largely discredited and discarded because of the way it is seen to lead to rigid, even totalitarian, social and built structures. Care is needed, then, to distinguish from these dystopias a dynamic and novelty-generating utopia that is capable of producing what Lefebvre describes as 'the space of the human species' (1991: 422). In doing so, we turn to two (quite different) writers who (in quite different words) help us to describe this mechanism: Digital theorist, Pierre Levy, in his account of *virtualization* (1998) and French philosopher, Louis Marin (1984), in his analysis of Thomas More's *Utopia*.

Utopia as Transformational Mechanism

First published in 1516, Thomas More's *Utopia* describes an island society in which harmony and stability is secured by the exclusion of the temporal forces of social change and their replacement by a fixed and enclosed spatial form. It is tempting, but mistaken, to think of More's *Utopia* as a depiction either of his hopes for a future society or a veiled

representation of contemporary society. Louis Marin's (1984) detailed semiotic analysis of *Utopia* shows that it is neither the presentation of an ideology nor a blueprint for action in that it has a far more complex relationship with the time and place in which it was conceived: 'It does not signify reality, but rather indicates it discursively'(197). *Utopia* is 'a critique of dominant ideology insofar as it is a reconstruction of contemporary society by means of a displacement and a projection of its structures into a fictional discourse' (195). While this 'obverse' fiction is a product of the society in which it was written, it exists as a 'fable-producing discourse' outside of that society, history and ideology (in a timeless no-place) (195). Neither simply representational nor ideological, *Utopia* creates a space (the 'utopic stage') for a critical discourse that lies between the utopian and the real. This dialectical process, which Marin describes as 'spatial play', is a powerful, radical tool that creates the 'historical conditions of possibility'; in the case of More, argues Marin, creating no less than the ideological preconditions for the growth of capitalism (198).

In other words, the 'utopic figure' remains an object outside of the discourse it creates and sustains. *Utopia* is 'not a goal of action', as Krishan Kumar (1991: 61) puts it, but 'primarily a vehicle of social and political speculation' (24). We need to look beyond the apparently fixed, prescriptive image that utopia presents to understand it as a dynamic and innovative process 'by which a specific system complete with spatial and temporal co-ordinates is changed into another system with its own coordinates, structures, and grammatical rules' (Marin, 1984: 242). This transformation is a product of processes of *displacement* and *projection*, including the spatialization of historical forces and social relations to produce a map, rather than narrative, but also the *tinkering* with one or more elements of the here and now to deliberately create difference; in More's *Utopia*, for example, the removal of money from human transactions. Rather than providing a blueprint for action (the construction of a society without money, for example), utopia is a rhetorical device that is designed to instigate a critical discourse that 'wedges itself in between reality and its other' (a discourse that reveals the impact of money on society and suggests alternatives) (Marin, 1984: 197). *Utopia* is a catalyst rather than end, and its transformative potential lies in the dynamic discourse that it creates and through which, in the words of Lefebvre, 'the imaginary and the utopian incorporate (or are incorporated into) the real' (Lefebvre, 1991: 348).

Though using a quite different language (one in which 'utopia' does not figure), Pierre Levy (1998), in his account of the processes of *virtualization*, describes a mechanism for transformation that is strikingly similar to that described by Marin (1984). Drawing the parallels between the two might allow us to start thinking about the construction of virtual worlds in terms of utopic processes.

Levy describes the operations of virtualization (which, it should be stressed, is in no way limited to digital phenomenon or the digital age) in terms of a 'trivium' of *grammar*, *dialectic* and *rhetoric* (Levy, 1998:103-118). At the level of *grammar*, Levy suggests that all *signs*, *things* and *beings* can be fractured and spatially and temporally displaced into 'abstract atoms' or 'virtual particles' which are 'detachable, transferable, and independent of living contexts' (110). It is through the recombination of these abstracted 'atoms' that 'the production of new qualities, a transformation of ideas, a true becoming' is achieved (25). Virtualization produces another place, a 'second world', that sets in motion a *dialectic*, an 'infinite process of doubling, return and correspondence', that moves between *virtual* and *real* and, through *actualization*, changes the real in the process (117). But these processes are not simply neutral and organic. They 'deliberately orient the ongoing evolution' through the deployment of *rhetoric* (146). Levy writes that; 'The rhetorical act, which is the very essence of the virtual, asks questions, embodies tensions, and suggests objectives. It introduces them, sets them in motion within a vital process' (117-118).

The notion of 'rhetorical acts' allows us to think about creative interventions that not only generate difference and possibility but also suggest *objectives*. Levy's approach is quite different from those, such as Kevin Kelly's, that invest in the workings of the 'hive mind' enabled by the Internet, the potential for *emergent* phenomenon (Kelly, 2008: 14). These promote, in the words of Fredric Jameson, 'a delirious contemporary rhetoric about which it is difficult to decide to what degree it is really Utopian – the Internet as an immense collectivity –or merely as a substitute for and displacement of the Utopian' (Jameson, 2005: 104). By contrast, we might read *Becoming Virtual* (Levy, 1998) as an attempt to resurrect utopianism in a digital age. Although nowhere does Levy use the word 'utopia', the idea of a rhetorical 'second world' (117), designed to set in motion a critical dialectic through which social transformation might be achieved, bears many of the hallmarks of utopia. It is worth bearing in mind, too, that much of Levy's work derives from that of Gilles Deleuze and Felix Guattari, who are more explicit in describing the role of utopianism in virtualization. As Eugene Holland summarizes their position, 'It is in turning away from history that the utopian dimension of thought re-potentiates virtuality and restores to it the chance of becoming other than what it was' (Holland, 2006: 230). For Deleuze and Guattari, philosophy's 'highest calling is to create concepts' (cited in Bonta and Proteri, 2004: 30) that, in similar manner to Levy's virtualization, abstract from actual events (history) to examine 'the virtual multiplicity of all that a society can be in order to call for an experiment that will create a new society' (cited in Bonta and Proteri, 2004: 34).

This function of abstraction, or *grammatization* [1], also features in a discussion of utopianism by Fredric Jameson (1997). In *Is Space Political?*, he speculates that a utopian architecture might begin to 'think of spaces that demand new kinds or types of living' (260), by breaking down the 'linguistic or semiotic apparatus' and establishing 'equivalencies' to

produce 'minimal units' –'rooms', 'corridors', 'doors' for example (261). From these building-blocks of architectural grammar might then be built conjectural spaces that 'dialectically challenge' the spaces from which they derive (261). Elsewhere, he provides this apt and colourful image of the process; describing 'a kind of Utopian workshop like the inventor's, a garage space in which all kinds of machinery can be tinkered with and rebuilt' (Jameson, 2005: 14).

The mechanism of transformation that is performed in Jameson's 'garage space' becomes clearer when we draw the parallels between Marin's *utopics* and Levy's *virtualization*. Both take the here and now as their raw material. Both involve a process of abstraction from it: for Levy (1998), a 'grammatization' involving 'substitutions' and 'correspondences' (117); for Marin (1984), a 'displacement and a projection' (195). Both involve the setting-up of a conversation (a 'dialectic' for Levy; a 'discourse' or 'infinite polemic' (xxii) for Marin) that relates the virtual/utopian 'second world' to the real. And both of them are envisaged as radical transformative projects; the one driven by rhetoric, the other by the utopian imagination. For both, speculation (the question 'what if?') is the motor that drives the radical project. Crucially, both the utopian and the virtual exist outside the creative processes they instigate: artificial architectures that never fully reveal themselves but which nonetheless create spaces in which new things may be realized - a virtual 'garage space' from which new machines may yet be wheeled out.

It is on the basis of this understanding of utopia as a dynamic, potential-generating mechanism for transformation that we can begin to suggest a Utopic Spatial Practice and think about a methodology for such a practice. Marin, Levy and Jameson's accounts all suggest that a process of abstraction from the here and now is essential to the design of rhetorical 'second worlds' that neither simply mirror nor turn away from existing conditions. We somehow have to conceive of a process of abstraction and novel recombination that is neither representational nor random but (indirectly) engages with the *real* - rhetorically, dialectically, creatively, even playfully - by asking questions, embodying tensions and suggesting objectives.

This process of abstraction has been variously described in terms of 'grammatization', 'atomization', 'displacement and projection', and the establishing of 'equivalencies' to produce 'minimal units'. It produces 'correspondences', 'substitutions' and 'inversions' in relation to the here and now. It can involve moving between unlike things, so that colours, sounds, sentences, actions, objects all become interchangeable (The way in which belief was once mapped into a 'sacred geometry' might be one model of this). It also, since this is specifically what utopianism does, involves translations between temporal and spatial plains (What is the shape of a piece of music, for example, and what space does it occupy?). We

need to think of it primarily as a philosophical enterprise. It is, for Deleuze and Guattari, the philosopher's production of concepts that fuels the utopian process. For example, More's *Utopia* is still powerful for Jameson in that it takes one concept (the abolition of money) and then maps out its consequences to produce a radically different picture of society (Jameson, 2005: 229). We may only need to produce one powerful twist in order to extrapolate from this a world that is entirely other. Crucial to the process of abstraction and construction of rhetorical 'second worlds' is the question, "what if?": What if money no longer existed? What if people could only travel in a clockwise direction? What if social hierarchy consisted of an alphabetical arrangement of first names? It is in this way that we produce what Jameson calls a 'scandal for the mind' (Jameson, 2005: 180) or Marin describes as a 'fracture', by which 'we catch a glimpse –as if illuminated by a flash of lightning – of the free force of unlimited contradiction' (Marin, 1984: xxii).

Utopia and Liminal Play

The utopic 'what if?' question produces difference through processes of disassembly and reconfiguration that are characterized by playful experimentation and lead to the creation of new 'thresholds'. We might therefore describe these processes as 'liminal' and turn to anthropologist Victor Turner's account of liminal rituals to further explore this quality. (Turner, 1982). For Turner, these 'playful and earnest'(35) rituals, often involving rites of passage, were central to the life of pre-modern cultures and consisted of the isolation and disassembling of the elements of a culture and their 'free and "ludic" recombination into any and every possible pattern, however weird' (28). An example Turner gives is the use of a 'monster disguise' that combines 'human, animal, and vegetable features in an "unnatural" way' (27). These rituals are potentially subversive, challenging the accepted norms of a society, suggesting 'new models, symbols, paradigms' (28). Turner's notion of liminal play, like Levy's *virtualization* and Marin's *utopics*, also describes an alchemical process: 'Novelty emerges from unprecedented combinations of familiar elements' (Turner, 1982: 27).

Ron Shields, who also sees *the virtual* as a liminal space, makes explicit the connection between liminality and utopia: 'liminality offers a utopian moment in which the weight of limiting social regulations is lifted', (Shields, 2003: 12) and there are further parallels to be drawn: both are marked by a profound distancing from normal, everyday reality; both involve stopping the clock and stepping outside routine time frames; and both involve spatial practices, specifically a narrative of journey. The traveller's tale of distant utopian lands, an essential ingredient of literary utopias (Kumar, 1991: 52 & 89), is every bit as much a rite of passage or pilgrimage in the manner Turner describes. It is tempting to suggest that the production of utopias, as a *liminoid* activity 'born with modernity' (Turner, 1982: 51),

has taken-on some of the symbolic functions, or incorporated within its form a memory, of pre-modern liminal ritual. Both can be seen as mechanisms for cultural experimentation that take us outside our everyday lives and contain what Turner calls 'the seeds of cultural transformation' (45). Marin also seems to acknowledge this link in writing of utopia that 'it knows nothing of time, and the only time it knows is the rhythmic cycle of rituals' (Marin, 1984: xxiv).

The claim that liminal play can be used to achieve social transformation is one that runs through the literature concerning mobile, pervasive and locative urban games. For their advocates, these 'games are a powerful platform for change' (McGonigal, 2010), leading to 'a form of empowerment for participants' (Flanagan, 2009: 204) in which they 'decenter the power relations' (de Souza e Silva & Hjorth, 2009: 608). I would argue that these games diverge significantly from the Utopic Spatial Practice I am proposing here in that they are most often geared to the production of seamlessness and coherence rather than difference and incongruity, and do not employ the kinds of dissociative processes of abstraction and translation that might produce 'a scandal for the mind' (Jameson, 2005: 180). As Rob Shields writes, 'Today's commercialized, digital virtualities are liminoid in that they derive from the liminal but do not entail rites of passage' (Shields. 2003: 17). However, in their concern with the radical potential of urban play, their use of a game mechanic to create novel social interactions, and the methods they employ to build and deploy imaginary scenarios in material spaces, these urban games do provide a foundation for the development of a Utopic Spatial Practice.

Utopia and Space

The aim so far has been to establish that utopia is able to supply a dynamic mechanism for achieving social transformation, and it has been suggested along the way that this mechanism has a liminal quality that aligns it with some aspects of locative media, but what has yet to be made clear is how a predominantly literary phenomenon can inform *spatial* practices and so it is to an elaboration of the spatial nature of utopia that we now turn.

Utopia, for Marin, is a distinctly spatial form in that it creates a timeless 'no-place' in order to arrest temporal (social-political-historical) forces and hold them up to critical examination. Utopia introduces 'the sudden distance by which contiguities and continuities of time and space are broken' (Marin, 1984, xxiv), producing 'a plurality of places whose incongruity lets us examine the critical space of ideology' (Marin, 1984: 201). In other words, the utopian mechanism creates the potential for transformation specifically through the production of an-other space.

Clearly, as in the case Thomas More's *Utopia*, these utopian spaces may remain confined to the page, achieving form only in text, maps and plans, but Henri Lefebvre's account of the production of space insists that social transformation is brought about specifically 'In and by means of space' (Lefebvre, 1991: 348). Capitalism, for Lefebvre, perpetuates itself through the production of 'Abstract Space', which conceals fractures and contradictions by representing space as homogenous, neutral, and transparent. Abstract Space has as its goal the 'total elimination of what is *different*' (371). Since 'new social relationships call for a new space, and vice versa' (59), the task of producing social change becomes the task of producing a *different* space: 'a counter-space in the sense of an initially utopian alternative to actually existing "real" space' (349). These counter-spaces produce a *maximal* difference that 'presupposes the shattering of a system' and emerges 'from the chasm opened-up when a closed universe ruptures'. (372). They operate by 'exploring the dialectical relationship between 'possible' and 'impossible' (60) and Lefebvre turns to "art", which 'puts its faith in difference' (175), as a model for exploring this relationship: 'On the horizon, then, at the furthest edge of the possible, it is a matter of producing the space of the human species – on a model of what used to be called "art"' (422).

Lefebvre's concept of counter-space reiterates the radical potential in creating speculative 'second-worlds' and helps us to reconsider the closed and distant utopian form as one that might be exercised in real world spaces. This bringing together of space-as-it-is and space-as-it-might-be is one to which the practices of locative media are ideally suited. They are able to give geographical shape to virtual worlds and superimpose them directly onto the landscape. Their rhetorical power is enhanced by their ability to produce direct geographical correspondences and anomalies through the collision, the collapsing, the folding one upon the other, of real and virtual spaces. They create incongruity through scenarios in which otherness and difference, if only for the duration of 'play', is experienced within, and in relation to, everyday spaces. And in this there lies the possibility of creating new thoughts and actions; novel ways of looking at the world and acting in and upon it.

In order to produce this kind of dynamic interplay between worlds, the design of utopian counter-spaces must first take serious account of the real social spaces into which these might intervene. Too often, the works of locative media have treated space as a neutral container or scenic back-drop for the playful activities they instigate, adopting what Lefebvre critiques as 'a view of space as innocent, as free of traps or secret places' (28). Mary Flanagan, for one, is critical of locative games that produce 'an abstracted, loose relationship to the location in which they are played', thus 'commodifying the landscape' (Flanagan, 2009: 199). In contrast, a Utopic Spatial Practice would need to understand the ways in which people inhabit and use spaces, the 'flows' of information that pass through them, and the complex ways in which power and ideology shape and produce these spaces, at both a local and global scale. In other words, there is a need to more fully embrace the

spatial turn, drawing on the work of Henri Lefebvre, whose ideas underpin it, as well as that of David Harvey, Manuel Castells and Edward Soja, in the field of human geography.

A brief summary of some of these ideas, particularly as they relate to globalization, is helpful here, since they also point to an enhanced role for utopianism. Lefebvre gives us the idea that capitalism survives only by 'occupying space, by producing a space' (Lefebvre, 1976: 21) in order to resolve its internal contradictions, a development of which is Harvey's notion of the *spatial fix* (Harvey, 1982). For Lefebvre, the radical response to this lies in reclaiming the 'right to the city', the re-occupation of the centre by the peripheral (discussed in Elden, 2004: 151), an idea that persists in Harvey's 'uneven geographical development' (Harvey, 2000: 73-94) and Soja's notion of 'spatial justice' (Soja, 2010). And from Castells, we have the concept of the 'space of flows' to account for the complexity of space in a digital age and its production of, for example, the 'informational city' and 'megacities' which are globally connected and locally disconnected (Castells, 1989).

It is in response to this complication of space that a revitalized role for utopianism has been envisaged. In *Spaces of Hope*, Harvey (2000) sees utopianism as essential in bridging an ever widening gulf between the macro-scale of the global and the micro-scale of the individual, which has fragmented and confounded radical political action. For Jameson, too, it provides a means of rising above the "'parcellated" subject positions characteristic of postmodernity' (Jameson, 2005: 214) and the 'opposition between global and local' (216). The role of utopianism lies in bridging the dislocations and anomalies between centre and periphery that are produced by globalization; arguing against *everyday local tactics* and for *strategic global action*, characterized by the 'radical break': 'it is the very principle of the radical break as such, it's possibility, which is reinforced by the Utopian form, which insists that its radical difference is possible and that a break is necessary' (Jameson, 2005: 231).

While it need not and should not propose a particular political programme, a Utopic Spatial Practice is an inescapably radical undertaking. It proposes the deployment of rhetorical strategies in which the designer becomes a political actor of sorts, suggesting a much stronger version of authorship than we have been used to. A Utopic Spatial Practice is not about creating neutral spaces for emergent phenomenon but, rather, producing radical provocations as a catalyst for radical change. It proposes a strategic response to power and ideology that is capable of reclaiming the centre ground. It acknowledges that local, tactical and peripheral actions, alone, leave untouched the centres of power, or, as Lefebvre put it, 'neglects the centres and centrality: in a word the global' (Lefebvre, 1976: 116). A strategic response to globalization must equally repudiate a simplistic and depoliticized positive rhetoric of globalization, common in discussions of the Internet, which studiously overlooks the forces driving globalization, and its spatially complex, scattered consequences. In other

words, the radical project requires that we re-think the link between micro and macro scales in ways that are more complex, more dynamic and more politically charged than the rhetoric of either 'global village' or local community would have it. It is utopianism that offers a strategy for rising above this dualism and surpassing the everyday to imagine alternative futures.

Asking works of locative media to address power and ideology on a global scale may appear overly ambitious but one can begin to imagine how global-local relations might be built into, or even form the basis of projects. Paula Levine's *San Francisco-Baghdad*, for example, overlays a map of Baghdad onto San Francisco and situates geo-caches in its streets to correspond with bombings in the Iraqi capital. Levine writes that, 'Collapsing "foreign" and "domestic", these maps bridge local and global, and allow walkers/viewers to experience spatial and narrative contiguity between separate and distant locations' (Levine, quoted in Farman, 2012: 50). Projects such as Esther Polak's *MILK* have also used locative technologies to tag and track products from their producers to consumers so as to explore the social and economic relations behind their production and distribution. Though not pursued in the *MILK* project itself, there are clearly radical implications to revealing global relations of use and exchange in this way.

Degenerate Utopias

In arguing for the continuing relevance of the utopian form and its applicability to locative media practices, there is also a need to acknowledge that it has been much abused. Examining the dangers that are inherent in its application helps us to define more precisely the precarious nature of the relationship between utopic and existing spaces.

Contemporary proponents of utopianism, though anxious to find in it a means of rescuing the radical project, are nevertheless cautious in its application and keen to make some fine distinctions, particularly between the speculative, unachievable utopia described by Marin, and those that are designed to be materialized in physical space. David Harvey, for example, uses a discussion of utopian urban schemes (including those of Le Corbusier, Ebenezer Howard and Frank Lloyd Wright) to argue that the materialization of utopia is inextricably linked to authoritarianism and even totalitarianism (Harvey, 2000: 163-166). To implement one of many possible spatial orderings is to close-off the alternatives through an imposition of will and invokes 'spatial systems of surveillance and control' (163). Marin, too, in a discussion of Disneyland, provides a graphic example of what may occur when utopia takes

physical shape. This 'degenerate utopia', as he describes it, produces 'ideology changed into the form of a myth' (Marin, 1984: 239). It represses dialectic by freezing disparate moments of history into a sanitized, mythologized, spectacular pastiche that is rendered in fixed spatial form and controlled through surveillance by hierarchical forms of authority. It perpetuates rather than critiques the fetish of commodity culture by offering a 'fantastic journey into a world of spatial play' (Harvey, 2000: 167).

It is in this slippage from utopias to fantasy worlds that this discussion of the fraught attempts to build utopia on earth mirrors similar debates within the literature on digital media and games; where issues surrounding surveillance, authority and spectacle also appear. Andreas Broeckmann (2003), for example, in contrast to the positive claims made about the radical potential of locative media, condemns it as the 'avant-garde of the "society of control"'. To return to the idea that *utopics* and *virtualization* are comparable processes, we might argue that, just as reducing dynamic utopic processes to a prescriptive 'utopia' produces a degenerate utopia, similarly degenerate forms are produced by reducing the dynamic process of virtualization to a virtual which, rather than instigating a dialectic, becomes the discourse in itself. It is a virtual that has become thing-like, an end in itself, robbed of rhetorical/utopian power. 'What if?' becomes simply 'is' and the potential to re-imagine and transform the world vanishes: As Levy puts it: 'we need to distinguish between a virtualization in the process of creation, on the one hand, and its alienating, reifying, and invalidating caricatures on the other' (Levy, 1998: 17). These caricatures abound as 'utopian' fictions in which interaction *within* the virtual world replaces a critical dialectic with the world outside. In contrast, Marin sees utopia as an object outside of the discourse it creates, not one containing it. The radical function of utopia is to produce a critical discourse that, to reiterate Marin's phrase, 'wedges itself in between reality and its other' (Marin, 1984: 197). In a 'utopic game', for example, players would not be asked to inhabit utopia but, rather, to respond to it discursively, in a dialectic with the world outside.

It is this distinction, between utopias in which we are wholly immersed and those that retain a distance, which Jameson describes in terms of 'The Great Schism' between fantasy and science fiction (Jameson, 2005: 34). The former is dominated by 'utopian fancy' (the everyday experience of its content), the other by the 'utopian imagination' (with its closed, distant form) (227). While science fiction, for Jameson, retains 'that system of radical difference with which we associate the imagination of utopia' (101), fantasy involves losing ourselves in a magical 'private fantasmé' (76) and holds no power to instigate 'a restless and speculative Utopian search' (231). This distinction helps us to distinguish between virtual worlds that bear only the outward signs of utopia, and the kind that we are seeking to define here.

'Utopian fancy' is not an optional ingredient, however. Constructing imaginary worlds in all their 'fanciful' detail 'lends emotional conviction' (Kumar, 1991: 89) by engaging us in experiences rather than confronting us with arguments, demonstrating what social theory can only explain, and thereby making palatable that which would otherwise be alien and threatening. In this, once again, there is a fit between the *modus operandi* of utopia and the methods of locative media, particularly where imaginary worlds are constructed as immersive experiences within a game scenario in which the novel, strange and incongruent can, as in a liminal state, be playfully, safely and coherently experienced 'as if' it were real. As Harvey writes of utopia, 'it allows us to conduct a "thought experiment" in which we imagine how it is to be (and think) in a different situation' (Harvey, 2000: 238). It opens-up those spaces in which it is possible to experiment with 'a vast range of competing ideas about social relationships, moral orderings, political-economic systems and the like'(161). However, 'utopian fancy' must remain tethered and subordinate to the 'utopian imagination' if these immersive experiences are not to detach themselves from and refuse to address the real conditions in which they are staged. In other words, we need to be careful about what kinds of 'second worlds' we build; dynamic, potential-generating ones rather than their 'alienating, reifying, and invalidating caricatures' (Levy, 1998: 17). Just as there is a danger that our utopias may simply reproduce current conditions rather than transcend them to create difference, and therefore potential, there is also a danger that they lose their grounding in, and critical engagement with, the here and now, and instead produce a flight of utopian fancy.

In practice, we might maintain this engagement with the real world by incorporating the utopic dialectic we are seeking to create into the design process itself; using it as a tool to negotiate the delicate relationship between virtual and real, rather than simply arriving at a virtual scenario. This dialectical approach to design might also help to resolve a particular conundrum that faces a Utopic Spatial Practice; that its work must remain largely invisible. For Marin (1984), the traces of a 'utopic practice' are only discernable in the 'utopic figure' (utopia) as a model of a structure of differences, 'an ensemble of signifiers and signified in spatial play' (197). In other words, the utopias or second worlds that we build must always remain just the outward sign of the largely intangible productive force involved in creating a 'utopic stage'. The real work of a Utopic Spatial Practice exists not in the design of utopias but in the production of a dialectic that operates between the utopian and the real. Thus, for Marin, utopia is 'the presence of a lack whose space is that by which and around which space is organized' (263). A similar concept is Levy's notion that as a 'sculptor of the virtual' (Levy, 1998: 185) our task is to create 'a void in the midst of reality' (118). Granted, this notion of hidden work is difficult to grasp, but not insoluble. Levy's model of sculptor is apt since by employing a dialectical method of design we can, like a sculptor making a cast for a bronze, produce numerous 'plaster casts' to test and refine our 'void' or 'presence of a lack'. However, it should be stressed that this dialectical approach is more than just an extension of iterative design practices which are concerned only with what 'works' and what doesn't.

A Utopic Spatial Practice is driven by rhetoric and concerned not only with creating a virtual world but with producing and maintaining the delicate relationship between virtual and real that is required to generate a critical dialectic with transformative potential. In establishing the nature of this relationship and suggesting a methodology that is capable of producing it, it is useful to look towards the model offered by mapping practices.

Mapping Utopia

Mapping becomes an important conceptual and practical tool for a Utopic Spatial Practice. It provides a model for negotiating the relationship between *virtual* and *real*, as well as the *fanciful* and the *imaginative*, allowing us both to ground our utopias in the here and now and, at the same time, abstract from it to generate new possibilities.

Those producing locative and pervasive media scenarios will recognize that much of their work involves reading, annotating and producing maps of both the physical landscape and the 'mediascape' with which they overlay it. It is useful, then, to consider utopian processes at work in the act of mapping. As Denis Cosgrove writes, 'All utopias require mapping, their social order depends upon and generates a spatial order which reorganizes and improves on existing models' (Cosgrove, 1999: 15-16). While mapping can be an authoritarian and coercive act (for Michel de Certeau, an act of 'panoptic power' [1984: 95]), landscape architecture theorist James Corner also sees in the 'agency of mapping' an opportunity to reveal and realize hidden potential 'in a world where it is becoming increasingly difficult to both imagine and actually to create anything outside of the normative' (Corner, 1999: 214). The distinction between the two lies in the plea from Deleuze and Guattari to 'Make a map not a tracing!', which they go on to explain in the following way: 'What distinguishes the map from the tracing is that it is entirely orientated toward an experimentation in contact with the real' (Deleuze and Guattari, 1987: 12). So whereas tracing reveals only what is already known, 'mapping unfolds potential' (Corner, 1999: 213). For Marin, mapping is also an inescapably utopic act. The map's fixed, totalizing point of view occupies 'a point of space where no man can see: a no-place not outside space but nowhere, utopic' (Marin, 1984: 207). It is the 'privileged point' (203) at which narrative and space, discourse and itinerary, meet to produce a picture of 'all possible routes' (205). It creates what Marin calls 'a plural organization of spatiality' (xiv); a description that seems readily applicable to locative media.

Mapping incorporates the utopian mechanism of transformation we have found elsewhere: starting with a process of abstraction to a virtual geography (the map), which in turn sets-

up a dialectic with the terrain through which new potentials are revealed. Corner describes the process as a 'double projection' which 'both captures the projected elements off the ground and projects back a variety of effects through use' (Corner, 1999: 215). Its utopianism lies in 'first disclosing and then staging the conditions for the emergence of new realities' (216). As with utopia, the map itself is not the goal but rather the process it sets in motion; the process of producing virtual worlds that reveal and challenge the closed nature of ideology. It was in this spirit that the Situationist's produced their psychogeographical maps which, for example, turn Paris into an archipelago of urban islands: 'the city imagined as a psychogeographical sea, pushing and pulling the sensitive soul along its eddies and currents', as Simon Sadler describes it (1999: 88). If their cartographical methods seem obscure, this is not surprising, since in attempting to lift the veil of ideology and reveal another city, it was necessary to employ rather intangible, irrational, sensate criteria, creating a liminal sense of dislocation in order to elicit new ways of seeing.

There are some other examples of alternative, 'cognitive' mapping practices that are worth looking at because they make explicit the link with pre-modern, pre-rationalist societies: Examples include medieval maps which tell stories of journeys made (Certeau, 1984: 120), the use of *star compass* and *etak* by Micronesian navigators (Turnbull, 2000: 131-160), Tibetan maps which chart 'cultural fields' more than they do landscape (Huber, 1999: 59-60), and the art of Aboriginal Australians which can be seen as maps of the Dreaming (Turnbull, 2000: 37). Social anthropologist Tim Ingold characterizes such examples of mapping as acts of 'wayfinding', in which knowledge is acquired *en route*, in contrast to the point-to-point 'navigation' facilitated by scientific map-making, in which knowledge is imposed from above (Ingold, 2000: 219-42). In other words, these mapping practices produce a different way of knowing the world to that of the scientific map's abstract representation of space, and so we might draw on these practices to imagine and construct alternative world views.

It is not by chance that these 'liquid' maps (Careri, 2005a: 42), through which sailors, pilgrims and nomads found their way, culturally and spiritually as well as physically, return us to Turner's description of liminal rituals and rites of passage (Turner, 1982). While the mapping practices of nomads might be seen as a *liminal* activity, those of their urban, mobile-phone-toting, GPS-enabled post-modern counterparts (William Mitchell's 'electronic nomad' (2003: 159)) might be seen as *liminoid* -distinguishable by the voluntary nature of their participation but nevertheless engaged in liminal-like pursuits. What can only be hastily sketched here is the idea that in pursuing new spatial practices, we are somehow returning to a way of seeing the world that has many parallels with pre-modern and specifically nomadic cultures. It is the same idea that is contained in Marshall McLuhan's 'retribalization' and return to 'acoustic space' (Cavell, 2002: 112), as well as in Deleuze and Guattari's discussion of nomadism and 'smooth' nomadic space (Bonta and Proteri, 2004: 118-119), and in Levy's work too: 'Virtualization reinvents a nomadic culture' (Levy, 1998: 29). It also figures, as we shall see shortly, in an alternative strand of architectural thought.

Building Utopia

As we look to models for spatial practice that are able to critique existing conditions and produce social transformation, it may appear odd to appeal to the figure of the architect. For Lefebvre, for example, the architect 'too often imitates or caricatures the discourse of power' (Lefebvre, 1991: 361) while for David Harvey, as has already been noted, the attempt to build utopia on earth has too often led to rigid authoritarian structures. However, as Krishan Kumar asserts, 'architecture has always been the most utopian of all the arts' (Kumar, 1991: 14) and both Lefebvre and Harvey, despite their reservations, are compelled to return to architecture as a model for radical spatial practices. Lefebvre, as we shall see, explores architectural forms that create a unity between built structure and *lived experience*, while Harvey emphasizes the capacity of the architect to both engage with real world problems and limitations and draw on the 'speculative imagination' to 'generate alternative visions' (Harvey, 2000: 237). He proposes as a model for radical action the figure of the 'insurgent architect', who works strategically across multiple spatial scales to construct utopian responses to power through a 'dialectical utopianism' that negotiates between the contingencies of the here and now and the desire for alternatives (241). Certainly, we can think of works of architecture that respond to this brief by producing social spaces that are dynamic and creative rather than rationalist and prescriptive. Bernard Tschumi's *Parc de la Villette*, for example, deliberately produces incoherence through the operation of three incongruous and conflicting structuring systems to create a space that is defined only by its use. Realised through 'multiple, diverse and transforming practices' (Kaye, 2000: 51), it is an architecture that is 'always in performance' (52).

Following on from the previous discussion of nomadism and wayfinding, we might also identify and draw on a 'nomadic' tradition of architectural thought. Francesco Careri (2005a), in his exploration of 'walking as an aesthetic practice', dispels 'the erroneous but common conviction' (66) that nomads, or 'homo ludens', are 'anti-architects' (29), unconcerned with the 'physical construction of space and form' (36). Instead he argues that 'there is a much more profound relationship that connects architecture to nomadism through the notion of the journey or path' and that it was nomadism that 'gave rise to architecture, revealing the need for a symbolic construction of the landscape' (36), resulting in the earliest architectural forms, including menhirs and stone circles.

Following on from their experiments with the *dérive* and psychogeographical maps, the Situationists also engaged with 'nomadic' forms of architecture, developing a utopian 'unitary urbanism' in which 'inhabitants would rediscover the primordial aptitude for self-determination of one's environment' and culminating in Constant Nieuwenhuys's design for a New Babylon: a city for 'a new nomadic society' (Careri, 2005a: 108). Underscoring

once again a utopian transformative mechanism defined by processes of abstraction and novel recombination, Careri writes that 'while in the maps of Debord the compact city was exploded into pieces, in those of Constant the pieces are put back together to form a new city' (116). Constant's New Babylon was designed as a 'city for homo ludens' (Careri, 2005b: 100), promoting a new way of living that would be characterized by playful creativity. In this 3-D *dérive*, contained within a space-frame structure, partitions could be moved around and endlessly reconfigured to adapt to the nomadic wanderings of the city's inhabitants (Sadler, 1999: 132). It produced a 'megastructural, labyrinthine architecture, based on the sinuous line of the journey of the nomad' (Careri, 2005a: 116). Begun in 1956 and developed throughout the nineteen-sixties, New Babylon was never built, but exerted wide influence, not least on Henri Lefebvre who also envisaged an appropriation and diversification of space through an architecture of 'semi-public, semi-private spaces, of meeting-places, pathways and passageways' (Lefebvre, 1991: 145). Lefebvre also suggests that the production of 'a living space which is an extension of the body' (221) might be found in the 'poetry of monuments' (227). Monuments such as medieval cathedrals (in contrast to the functional *buildings* of modernity) embody a transformational mechanism of revolutionary potential: 'Buildings are to monuments as everyday life is to festival' (223). Lefebvre suggests that, by creating an experience of 'total being in a total space' (221), such monumental spaces may restore a lost unity of body and mind -but even he acknowledges that these thoughts on architecture are 'no more than suggestions, or pointers' (363).

It appears that many of the most intriguing utopian architectures remain un-built, tried and tested and it might be argued that their *virtue* lies precisely in their *virtuality*. If ever realised, the argument goes, they would lose the critical distance that allows them to speculate on alternative organisations of space. Harvey, for one, ultimately rejects purely spatial utopias as necessarily degenerate and argues instead for a 'dialectical utopianism' that recognizes the interplay, and negotiates the tensions between, spatial and temporal plains (Harvey, 2000: 182). But this objection to the building of utopias is, once again, to equate the virtual with the non-material, reinforcing an opposition that makes less and less sense. In what has been variously described as the 'media city' (McQuire, 2008) or 'informational city' (Castells, 1989), 'the virtual, social and physical worlds are colliding, merging and coordinating' (Rheingold, 2002, xviii). The distinction between architect and artist, bricks and media, is no longer so clear or important. It is not that a New Babylon could not or should not be constructed but how best to go about building it, and with what tools and materials. Architects have been amongst the first to take advantage of these new conditions, playing with the relationship between informational and material elements to stress 'the dynamic, transversal and performative character of architecture' (Feireiss, 2007: 220). However, artists working in the field of locative media have a distinct advantage in that the informational layers with which they predominantly work do not require a plot of land or planning permissions, and are quickly and cheaply erected, modified and demolished, arguably creating wider scope for playful experimentation. New Babylon may

yet be realized if conceived of as an informational layer that is superimposed on material space to produce a virtual labyrinth that experiments with novel forms of social space. In other words, while the differences between the two practices cannot be reduced to the old real/virtual dichotomy, since both work across and blur this distinction, the utopic potential of locative media does lie in the *relative* independence it enjoys from material conditions. It necessarily operates within and engages with material spaces but nevertheless produces distinctive and coherent informational spaces that might allow us to retain some notion of the virtual as 'a space apart'. It is the retention of this *difference*, utopia as 'an imaginary space within real social space' (Jameson, 2005: 15), 'a void in the midst of reality' (Levy, 1998: 118), 'an experimentation *in contact with the real*' (Deleuze and Guattari, 1987: 12; my emphasis) but not necessarily subsumed by it, that distinguishes a Utopic Spatial Practice.

However, architecture continues to provide inspiration for a Utopic Spatial Practice through the ways in which it engages with site, its experiments with the creation of dynamic social spaces, and, not least, in the sheer scale of its utopian ambition. While many works of locative media treat the urban landscape as a scenic backdrop for playful encounters, architecture doesn't hesitate to lay claim to the centre-ground, proclaiming its 'right to the city'. That isn't to say that, as media practitioners, we should don hard-hats and start building cities; rather that we should refuse limits on our practice that prevent us from strategically contesting the built spaces of the city, and which instead confine us to tactical interventions in the spaces between. It is a conceptual issue and, once resolved, allows us to focus our attention on the nature and purpose of the spaces we propose to construct. Whether these are material or informational, it ultimately matters little, because the key choice for us now, this paper argues, is between dynamic, potential-generating utopias in which 'the space of the human species' (Lefebvre, 1991: 422) might be created and their degenerate counterparts, producing spaces of consumption, spectacle and control. A Utopic Spatial Practice can contest the production of such spaces by reacquainting the city with the utopian impulse that once inspired it and formulating strategic responses to power that insist on putting the utopian imagination back to work in the heart of the city.

Biographical Note

Dan Frodsham, after a career as a television producer/director and documentary-maker, has recently returned to academic study, receiving an MA with Distinction from the University of the West of England. He is now a PhD candidate at the University of Exeter, supported by a 'Digital Humanities' scholarship from the Arts and Humanities Research Council, where his research focuses on mapping and map-making practices in locative media, and how artists

have used these to explore and critique different representations of time and space.

Notes

[1] Levy's notion of 'grammatization' is quite different from that of Bernard Steigler's which sees it as an outsourcing of human memory, by technical means, leading to an expansion of memory and consciousness beyond the human: discussed in, Bernard Steigler, 'Derrida and Technology: Fidelity at the Limits of Deconstruction and the Prosthesis of Faith', in Tom Cohen (ed.), *Jacques Derrida and the Humanities: A Critical Reader* (Cambridge: Cambridge University Press, 2001), p.70.

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FCJ-142 Spectacles and Tropes: Speculative Design and Contemporary Food Cultures

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Introduction

Speculative design is a practice of creating imaginative projections of alternate presents and possible futures using design representations and objects. At times critical and at other times whimsical, it is a distinctive, if loose, grouping of projects. Using the term broadly, speculative design covers a range of work across disciplines, fields, and historical and contemporary movements. For example, much of the work of the Futurists and Constructivists in the early Twentieth Century, which blended machines, politics, and everyday life, is suggestive of speculative design as it is practiced today. Collectives such as Archigram and Superstudio in the 1960s and 70s produced now iconic graphic representations of future cities, which stylistically and thematically inspired generations of architects and designers. In the late 1990s Tony Dunne and Fiona Raby coined the term 'Critical Design' to label product and interaction design that sought to 'challenge narrow assumptions, preconceptions and givens about the role products play in everyday life.' (2007) More recently, the term 'Design Fiction' has been used to characterize the 'use of diegetic prototypes to suspend disbelief about change.' (Sterling, 2012, see also Bleeker, 2009) All of these, I maintain, can broadly be considered as kinds of speculative design because what is common across this work is the use of designerly means to express foresight in compelling, often provocative ways, which are intended to engage audiences in considerations of what might be.

As Anne Balsamo points out, design is not only inventive, it also reproduces culture: 'Through the practices of designing, cultural beliefs are materially reproduced, identities are established, and social relations are codified. In this way culture is both a resource and an outcome of the designing process.' (2010, 3) This notion of design reproducing culture is certainly as true for speculative design as it is for any other form of design. Even though we often think of speculative design as being particularly inventive, at times fantastic, like any design it is grounded in the present. Even as speculative design expresses alternatives it references, often mimicking, the status quo and replicates the various styles and themes of the moment. Because of this, close examinations of speculative design projects offer us a view of the present reinterpreted and in relief.

As speculative design continues to develop as a practice, it is incumbent upon critics to provide ways of analyzing its construction and the work that it is, and is not, doing. Although speculative design projects offer promise as a way of using design to comment upon culture, there are also limits to speculative design. I begin this essay by tracing the ways two recent speculative design projects reproduce aspects of contemporary food cultures. I will then draw out from these projects two general strategies of speculative design, by which these designs work to lure us into a consideration of what might be. I will also take a critical view of these strategies, to discuss their limits as well as their potential. The intention of this is not to level critiques specifically against these projects, but rather, to contribute to the ways in which we might analyze speculative design, its ways of working and effects.

Food Culture and Design

Although public interest in food is not new, there seems to be a reinvigorated attentiveness to food in contemporary society. Multiple factors are at play in this. In part this reinvigorated attentiveness to food stems from an increasing awareness of the connection between kinds of food, modes of food production, and health. In part it stems from the topic of sustainability and the realization that changes in agricultural practices could help foster a more sustainable society. For some, this attention to food is as an act against previous paradigms of domestic convenience. And, in part this reinvigorated attentiveness to food stems from access to a greater diversity of food and thereby an ability to experiment with different foodstuffs and cuisines. From the confluence of these factors, there is a blossoming of 'food cultures,' by which I mean communities of practice and interest that are defined by their relation to the production, preparation, and consumption of food. One need only look at popular media to see evidence of this, from the *Food Network* channel to CNN's *Eatocracy* series, to the stardom of food advocates such as Jamie Oliver and Michael Pollan, and in changing consumer

habits and public policy, from the increase in farmer's markets and the farm to table movement (see Sonnino and Mardsen 2006 and Martinez et al. 2010), to the recent re-design of the so-called food pyramid by the United States Food and Drug administration. This blossoming of food cultures is reflected throughout design research and practice, even prompting the formation of new design communities. For instance, there is now an International Food Design Society and in 2010 the first Food Experience Design conference was hosted in London, England. More and more, designers are exploring the relations between food, science, and technology. The 2012 exhibition *Edible: The Taste of Things to Come* at the Science Gallery in Dublin, which featured over a dozen projects, many of them speculative in nature, is one example of how designers and artists are engaging cuisine and food consumption as both themes for investigation and mediums of expression. Other designers are working to develop systems to support new forms and practices of agriculture. The collective of designers involved with the *Re:farm the City* project (2008-present) are working to create both hardware and data sharing platforms for urban farming and gardening. This loose organization provides online information resources, hands-on workshops, and software for designing and using environmental sensing technologies and computational visualizations to assist small-scale sustainable agriculture. This work is exemplary of another pragmatic way that design, and in particular interaction design, is engaging with food cultures through the making of new agricultural technologies.

To use Balsamo's framing of design, food cultures are lively sites of both the invention and reproduction of culture through design. And as design concomitantly invents and reproduces culture, speculative design does so in a distinctive manner. Speculative design works by isolating facets of culture and recasting those facets in ways that alter their meaning in order to produce new images — new imaginative instantiations — of what might be. So, how is this occurring with regards to food cultures? What is it that speculative design is reproducing and recasting and to what effects, or lack of effects?

The Reproduction of Food Cultures in Speculative Design

In 2009 Design Indaba (an organization that sponsors design programs in South Africa) commissioned five designers to produce visions of the future of farming, under the program title *Protofarm 2050*. The designers selected were all known for their speculative approaches: Futurefarmers, 5.5 Designers, Dunne & Raby, Revital Cohen, and Frank Tjepkema. As with many such projects, the motivation was grounded in issues of sustainability, specifically conditions seen as contrary to sustainability including population growth and other strains put on the food system, such as climate change and increased meat consumption. The collection of concepts in *Protofarm 2050* were thus intended to explore possible futures of agriculture

with respect to these conditions now and how they might be in the year 2050. In considering what it is that speculative design does, it is worth noting that the projects of *Protofarm 2050* were framed as 'looking beyond the possibilities and predictions currently in the public domain.' Of the five proposals, I will discuss one of them here.

For *Protofarm 2050* the French design firm 5.5 Designers produced a project titled *Guide to Free Farming* (2009). The project consists of a series of print booklets for different cities and the Paris booklet is presented in the video documentation. (<http://www.designindaba.com/video/protofarm-2050-guide-free-farming>) The Paris booklet begins with a map of the city, and then goes into page spreads with pictures of the edible flora and fauna of the city. Immediately, a hint of dark humour foreshadows content yet to come, as a poodle is pictured along with the other edible fauna. What follows throughout are a series of hunting and gathering tactics for the city of Paris, along with recipes for the hunted and gathered, and prototype tools to assist in the process.

The first concept presented is hunting pigeon and the page spreads include an image of a person in a camouflaged cloak, designed to blend in with a cobblestone street, stalking a pigeon for the kill. The following page spread then shows how to dress and grill the pigeon to be served on a stick. The rest of this section, titled *Specialties*, includes similarly extreme forms of hunting and preparation, such as methods of trapping starlings and using them for pâté or trapping rats for grilling, as well as more tame practices of gathering dandelions. The next section, *Addresses*, provides site-specific food gathering activities, such as fishing the river Seine using a modified cane or gleaning fruit left over from Parisian street markets with the help of a special gleaning bag. Diverging from food, the section even covers scenarios of gathering hair from sheared dogs to be used for making clothes. The final section of the book, titled *Farm Tools*, provides photographic documentation of the various design products used throughout the book for the featured activities, such as the camouflage cloak for pigeon hunting, the starling trap, the rat trap, the cane for fishing, etc. Each of these objects is simply styled: most all are grey or white with clean geometries.

Guide to Free Farming may at first appear outrageous, but it is not so far from reality, at least in regards to the notion of seeing the city as an environment for hunting and gathering. In considering *Guide to Free Farming* as a speculation on the future of farming, what we find is a reproduction of the contemporary practice of foraging. Foraging — the opportunistic gathering of foodstuffs as they grow wild — is a practice that predates modern agriculture for the collection of edible plants. It is also a practice that has seen resurgence. We can conjecture reasons why: it is hyper-local, sustainable, and often provides novel food varieties.

Indeed, it is common to find foraged greens and edible flowers for sale at farmers markets and for some chefs to use foraged foods on their menus. The notion of hunting in the city, though, is a bit different. Fishing in cities is certainly common enough. Hunting of pigeons and trapping of starlings and rats for human consumption is not unheard of, but it is uncommon. Moreover, it is usually associated with poverty. But its presentation within *Guide to Free Farming* casts such hunting and trapping as seemingly reasonable, perhaps even desirable endeavours for all to engage in, resulting in foods that appear appealing.

This reproduction of foraging is also an interpretation of foraging, a new imaginative instantiation of what might be. The project leverages contemporary cultural imaginaries and practices of foraging, extending them to the notion of hunting. As if taking lessons directly from Barthes 'Rhetoric of the Image' (1977) the designers employ the visual styles of high-end product photography to document both the process and the product of urban hunting and gathering, expressing it in a way that draws a set of associations with consumer goods of a certain class. The photography would not be out of place in an IKEA catalogue or an issue of *Dwell* magazine. In so constructing these images, the designers constructs connections to an even broader trend of food cultures: the aestheticisation of food production and consumption, which finds its apogee in the notion of the artisanal.

From clothing to beers to cheeses and chocolates, the artisanal is a cultural trend of the early 2000s and 2010s. In the common use of the term, 'artisanal' refers to goods that are hand-made, usually in small-batches. Indeed, one way to characterise artisanal goods is as that which is small-scale. And even more than being small-scale, artisanal goods have a peculiar relationship to scale in that they do not scale, or at least, they do not profit from scale: 'Artisanal products are labor-intensive rather than capital-intensive and therefore cannot benefit from economies of scale.' (Barjolle and Chappuis, 2000, 1) With artisanal goods, be it cheese or clothing, there is a great attention to the craft and materials of production, which in turn, results in a product that is considered to be of unique character and quality. Artisanal goods have become popularised because of their exclusivity and a cultural embrace of the bespoke. In part this may be due to a search for greater quality and value in times of economic downturn, but more likely, it is an expression of nostalgia and some notion of authenticity as style. This is not to diminish the artisanal in any way, but rather to acknowledge that the artisanal is currently as much a marketing phenomena as it is a commitment to craft.

An unusual take on the artisanal is found in *Family Whiskey* (2010) (<http://www.jamesgilpin.com/Diabetesengage.html>), a speculative design project by James Gilpin in which he proposes that the urine from diabetics might be used in the production of custom whiskeys. These whiskeys could then be marketed as having distinctive family origins. Unlike the family origin of most whiskeys that trace to a family recipe or locale, these could ostensibly be traced,

or at least claim association with, a family's physiology: each whiskey would be distinct by the qualities of the urine produced by that family. According to Gilpin the motivation for the project is a reflection on and exploration of 'the consequences of using science to alter our bodies' abilities.' (2010) This reflection is grounded in the lived experience of Gilpin, who is himself a Type 1 diabetic. One result of diabetes is that diabetics produce urine with extremely high sugar content. In Gilpin's proposal, this sugar would be extracted from the urine and then combined with mash used in the production of whiskey, in order to accelerate the fermentation process and produce distinctive flavour profiles. The project is expressed through multiple formats, including a series of flasks filled with various whiskeys produced through this process and staged photographs of home distillation equipment. These items are brought together in an installation and performance of sorts in which Gilpin serves the whiskey.

In *Family Whiskey*, Gilpin is clearly reproducing trends of artisanal goods. So-called bespoke beverages are one such domain of production and consumption. For instance, there is a niche of consumers reverse-engineering mineral waters using home carbonation systems and base elements ordered from online retailers (see Twilly 2012). Closer even to Gilpin's project, *WhiskeyBlender* (www.whiskyblender.com/) allows users to experiment in a online laboratory of sorts, mixing blends (with names such as 'Burnt Puddin' and 'Smoke on the Water') to produce new taste profiles and custom single bottle batches of scotch. The concept of *Family Whiskey* fits right within these artisanal goods and practice—it is not the notion of the bespoke beverage that is odd, just the ingredients for this beverage. In addition to reproducing the notion of the bespoke beverage, the design of *Family Whiskey* also reproduces the visual and material cultures of artisanal goods. The various parts of the installation—the glass flasks and their mounting hardware, the labels on the whiskeys, the still, even the objects in the staged photographs—exhibit an artisan-like attention to construction and presentation. At one and the same time they reference the object aesthetics of a modern laboratory and those of a traditional bar.

There are strong aesthetic and conceptual connections between these two projects. Both trade upon an aestheticisation of food production and consumption. And even more than an aestheticisation, we might describe the treatment of foraging and distilling in these projects as a fetishising of food production and consumption. There is, in both *Guide to Free Farming* and *Family Whiskey* an intimacy, a closeness, brought to food goods and their making, which reproduces and aligns it with trends in food culture.

Most generally, we can read *Guide to Free Farming* and *Family Whiskey* as reproducing practices and discourses of small-scale agriculture. Although there is no strict definition, small-scale agriculture can easily encapsulate foraging and artisanal foodstuffs and also

include all manner of growing, harvesting, selling, and making foodstuffs on smaller farms, slaughterhouses, and production facilities. The design of *Guide to Free Farming* hones in on the trend of urban farming and the notions of do-it-yourself sufficiency that often accompany discussions of urban farming. Likewise with *Family Whiskey*, Gilpin's project leverages the trend of small-batch whiskey, which is a trend regularly positioned as being counter to corporatized distilleries. By being expressive of this general trend away from industrialized agriculture and foodstuffs, these projects can be seen as imaginative projections along current vectors in food culture. They are extreme to be sure, but still situated and identifiable within a constellation of contemporary theories, beliefs, and values concerning the future of food. By aligning with notions of small-scale agriculture, these speculative designs also position themselves as distinct from earlier visions of the future of farming and food, which more often explored concepts of technological automation and monitoring or the reduction of cuisine to pills or simulated food products.

Through their interpretation and recasting of food cultures, *Guide to Free Farming* and *Family Whiskey* offer us provocative images for consideration. The notion that the images and objects can spark meaningful reflection or dialogue is the potential of speculative design. But it is also the aspect of speculative design that is most problematic because it has been the least well documented, is the most difficult to ascertain, and seemingly too often, simply does not come to fruition. A critical and yet still appreciative voice towards these speculative designs is appropriate. How do these images and objects provide, or fail to provide, opportunities for dialogue and reflective considerations of what might be?

Spectacles and Tropes

These two speculative design projects — *Guide to Free Farming* and *Family Whiskey* — exemplify two ways of engaging audiences in a consideration of what might be. The strategies for constructing and communicating imaginative instantiations in each of these projects are, however, quite different. This difference in strategy also reflects a difference in how the projects structure the audiences' engagement with food as a subject matter, and reveals the designer's commitments to food cultures and other topics.

With *Guide to Free Farming* what we are presented with is speculation in the form of spectacle. The practice of foraging is commoditised in the production of fictional implements. The designerly representations of the activities of urban hunting and gathering cast those activities as dramatic events. At first, it is unclear whether and to what extent this work is intended to be ironic or perhaps a kind of classical *détournement* — the use of spectacle and

the images of capitalism as a disruption to the system of spectacle and consumerism (Debord and Wolman 2006). The skillful and clever use of spectacle can serve a critical purpose. This is part of the intent of the *détournement* as developed by the Situationists. But that is not what we encounter with *Guide to Free Farming*. On the back of the book the designers provide some insight into the motivation and desired outcome of the project. It states:

The Guide to Free Farming project was presented in the form of a book that aimed to restore a close relation between consumers and the natural environment, creating a shorter link to guide people who live in cities to take on the role of farmers in their urban environment. It is about farming in the city and encourages readers to discover the unsuspecting resources hidden in our towns. (2009)

This statement demonstrates how designers attempt to make use of alluring images and objects as props for ideas, as gateways for discourse or other forms of action. The suggestion is that the content of the book might have some sort of effect in initiating change. But, upon scrutiny, it is unclear what that effect or change might really be. The implicit claim being made is that in order to shorten the link between consumers, food, and the urban environment, what is needed are more products (camouflage cloaks, window box traps, etc.). This claim is problematic—it seems dubious. And with little more than the catalog-like displays to examine, we, as audiences to be prompted into reflection, are left without much support for further exploration of these activities and the broader issues they might engage.

Indeed, upon consideration one of the most striking aspects of the *Guide to Free Farming* is how little it seems connected to the practice of foraging or food cultures more generally. Although the project reproduces the practice of foraging and thereby draws associations with food culture, its reproduction of foraging is only a surface reflection. The activities, values, techniques, histories, traditions, and controversies of foraging are nowhere to be found, or even alluded to in this work. What, then, is it that we are supposed to glean from *Guide to Free Farming*? It would seem as if the project is reductively spectacular: pragmatic information and critical perspectives have been exchanged for extraordinary images. The problem with this is not that the speculation is unrealistic or exaggerated. The problem is that the speculation seems disconnected from the very practices and issues it purports to be commenting on, and the reinterpretation of foraging is reduced to a re-styling of foraging.

Gilpin's *Family Whiskey* also trades upon spectacle, but it is not really the intent of *Family Whiskey* to engage us in a consideration of food cultures. Gilpin states that the purpose of *Family Whiskey* is to explore 'the consequences of using science to alter our bodies' abilities.'(2010) Thus, in this project food and food cultures are not a topic, they are a trope.

Within literature, tropes are figurative language such as metaphor, irony, or hyperbole. They work to convey an idea through terms and structures that are not literal, but rather symbolic. Design too can employ such figurative turns and expressions in the making and interpretation of objects. Tropes simply are tools for crafting meaning. They enable the creative manipulation of material and form so that we can make one thing mean another thing. In *Family Whiskey*, food and food culture is used as a figurative means of investigating and expressing issues concerning science and bodies. More specifically, the culture and practices of small-batch whiskey function as a metaphor for Gilpin's topics of science and bodies: a way of engaging the topic through an association of food to science and an exploration of the transfer of qualities across these categorical things. As Lakoff and Johnson state "The essence of metaphor is understanding and experiencing one kind of thing in terms of another." (1980, 5) Gilpin's *Family Whiskey* allows us to understand and experience science and food and food as science.

It is useful to consider how this metaphor is constructed and the work it does. Tracing the relations within the metaphor gives insight into how tropes can function to scaffold meaning. There is an inherent relationship between food and science. Before the human hand enters in to pluck the fruit from the tree, even the most organic of foodstuffs is the product of a series of biological and chemical interactions and reactions. Contemporary foodstuffs are very much products of science, with 'food science' being an established field. Moreover, the relationship between artisanal foods and science is enticingly complex. On the one hand the artisanal is defined by being distinct from industrial modes of food production and food products that tend to rely on food science. On the other hand, many craftspeople involved in artisanal goods rely upon a deep understanding of the science of production, from the biological processes and transformation of cheese to the chemical processes of baking bread. What a close reading of *Family Whiskey* does is bring to the fore how food and foodstuffs operate as figurative instantiations of science.

What is missing still from *Family Whiskey* though, is a substantive explanation of those relationships between food and science: between diabetes and the production of sugar and the fermentation of whiskey. It is unclear how the flavour of whiskey is affected by this sugar drawn from urine. Does it add a peaty richness or briny bite? Does it round out gaps in an otherwise incomplete taste profile? Or doesn't it matter? Perhaps it is less about the culinary experience of the product and more about an appreciation of the ways in which the process creatively intermingles the corporeal, technical, and everyday? In *Family Whiskey* the groundwork of identifying the relations and a set of factors between science and food culture has been done. But whilst this provides us with a starting point for further consideration it leaves us hungry for more critical engagement.

From Provocation to What?

Both *Guide for Free Farming* and *Family Whiskey* present us with enticing images for consideration of what might be. We are initially taken aback and pause to think through the scenarios of use that we are witness to in these works. As a means for provocative expression, spectacles works well — they arrest us and pique our interest. But without connection to actual practices or issues, spectacles can quickly disappoint. Reflecting on the images of spectacle, too often we are left wanting for meaning and significance. The construction of tropes, particularly well-crafted tropes, can further the effect of spectacle by providing a scaffolding of sorts for reflection or inquiry. This scaffolding must be apparent and accessible and connect to the social contexts of the present or the presumed social contexts of the future.

Engaging with politics and the political is one way to construct such scaffolding. But too often, speculative design seems to skirt these themes. For instance, politics and the political issues that embroil food cultures in contemporary society are absent from *Family Whiskey* and *Guide to Free Farming*. This is surprising given that food is a highly contested domain, governed by a host of disputed regulations and codes. This is particularly true of artisanal food production. For instance, in the United States cheese production is highly regulated and raw milk, a staple of artisanal cheese production, is a contested animal product, all but made illegal. Certainly, using urine for whiskey or hunting in Paris would be mired in health codes and regulatory conundrums. Many of these codes and regulations are in fact expressions of values that are operationalised along political registers in the form of laws and ordinances.

Not all speculative design must be political, but to not address politics in social contexts where they are usually present is a striking omission. It is also a missed opportunity. If one purpose of speculative design is to prompt reflection on contemporary issues and the possible consequences of science and technology, then engaging with politics and the political could lend speculative design projects tractability and fodder for dialogue and debate. For instance, in regards to *Guide for Free Farming*, one might ask, is the hunting of pigeons currently legal or illegal? If it were legalised would one need a hunting license? If it were illegal, would people go to jail over this crime? Where is line between foraging and poaching? Would there be city game wardens that would police and protect the pigeon, rat, and starling populations? Or with *Family Whiskey* one could ask, what are the regulations that structure the production of spirits and the disposal of human bio-waste? Is whiskey made from urine like any other animal-based product, or does the introduction of human materials place it in a new category of foodstuffs? Attention to questions such as these, which immediately engage the politics of farming and food production through a speculative lens, would provide depth to the projects.

One limit of speculative design, then, is the extent to which it foments or supports substantive reflection on alternate presents and possible futures. This limit is not determined by any one strategy, but rather by the efforts of the designers employing the strategy. So, it is not that spectacle is without value. There is value in base provocation as it can serve to jolt us from assuredness and complacency, if only momentarily. It can spark a curiosity that might be pursued, but to be truly provocative is to rouse to action. If an object of speculative design does not provide access to a breadth or depth of subject matter, then we should be careful about making claims for its capacity to foment or support substantive reflection. It is difficult to meaningfully consider what we are uninformed about. The challenge and responsibility for the designer, then, is to provide that information, those scaffolds, in compelling and productive form.

It is useful to ask how speculative design could be used for more than provocation, to enable more meaningful engagement with the substance of an issue. In order for engagement to occur what is needed is articulation of both the components and potential consequences of a situation, such that an audience might be able to appreciate that situation. Or, put another way, what is needed is to express the situation of an alternate present or possible future as an issue: a situation that is contestable. As a way of sculpting meaning, the trope lends itself to this. In the making and expression of a trope, relationships are constructed between ideas and objects, and these relationships can be interrogated and challenged. For example, with *Family Whiskey*, the (literally) fluid transfer between science and foodstuffs, between what the body produces and what the body consumes, and the transformation of the effect of a disease into a quality of product are new pathways along which to explore Gilpin's issue of concern: 'the consequences of using science to alter our bodies' abilities.'

Gilpin's project *Family Whiskey* also points to the performative possibilities of speculative design: the events at which he attempts to serve the whiskey become further opportunities for engagement. Some designers are beginning to explicitly explore the performative and eventful potentials of speculative design. The *Material Beliefs* (<http://www.materialbeliefs.com/>) project is exemplary in this regard. Over the course of several years the designers and researchers from the project staged a series of events that made use of the products and processes of speculative design to bring together various publics to consider possible futures of biotechnology. The *Center for Genomic Gastronomy* (<http://www.genomicgastronomy.com/>) provides another example of using workshops as a design form, with an emphasis on exploring the relationships between biotechnology and food. Images and objects still exist in such projects, but it is the performative and eventful qualities that are fundamental to this design work. In addition to providing a novel form for engaging in speculation, "the event" also provides a novel form for engaging politics and the political.

As designers explore new forms and purposes of speculative design, the design critic must also develop new ways to make sense of those forms and purposes, working in tandem to articulate the possibilities and limits of speculative design. Too often, speculative design is spectacle alone, devoid of the content and grounding necessary to make productive critical statements or to be an instigator of public debate. This is particularly the case with regard to politics and the political. If design reproduces culture, what politics are being reproduced in speculative design? If speculative design turns from objects to events, how do we appreciate and critique the political qualities of these performative experiences? Spectacles and tropes are two constructs for describing and analysing speculative design. More constructs need to be elucidated and experimented with. Given the opportunity to prompt reflection on contemporary conditions and express the possible implications of current trends in science and technology, there is much more speculative design, and speculative design criticism, yet to be done.

Biographical Note

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FCJ-143 Ouvert/Open: Common Utopias

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Introduction

The geography of the city functions as a mechanism for distributed power. Power manifests in the physicality of everyday urban life, through planning, government jurisprudence and resident use. The train tracks in the Canadian city of Montréal are one site where this dialectic of power becomes visible, in the creative tactics of appropriation used by the city's residents and the multiple layers of power and authority that created and now govern it. In this essay, we examine the commons as a creative potentiality for urban advocacy and action, as a way to rethink the tensions between private ownership, public governance and everyday resident use of city space. How can the re-emergent notion of the commons help us to think of a shared urban space and inspire action? And how does the contradiction between informal, creative tactics and formal community mobilisation unfold in the network that emerges between an online and offline community of people advocating for crossings on the train track?

The revitalisation of the concept of the commons provides a way of thinking past the impasse of public and private land ownership and validates everyday uses of land as practiced by residents. In both its ideal and enacted forms, the commons helps to inform an alternative vision of a shared urban space. We examine this concept through a project that was initiated by the authors in the spring of 2010 to advocate for legal crossings on the train tracks in Montréal. Entitled, *Ouvert/Open*, the project works to reimagine local public space and to encourage resident involvement in urban planning. *Ouvert/Open* also serves to highlight the inherent contradictions that emerge in digital and material activism, between anarchic quotidian practices and government recognition, to re-shape the priorities and directions of the city.

Clandestine paths in a post-industrial urban landscape

Railway tracks cut through the heart of Montréal – a relic from an industrial past. They are the material manifestation of the building and settlement of the nation-state of Canada, intimately tied to a project of expansion, privatisation, and enclosure of land. The Montréal segment of the transcontinental opened in 1876, and was purchased six years later by the Canadian Pacific company. Canadian Pacific (CP) itself originated as a corporation with the project of creating a railway that stretched from British Columbia to Eastern Canada. In fact, this railway literally tied the country together, as its construction was one of the conditions upon which British Columbia agreed to join the Canadian confederacy. It therefore was central to the emergent nation-state and its project of colonial expansion.

In the following decades, residential and industrial suburbs grew around the railway in Montréal, a centre of intense industrial activity, again linked to processes of economic development and nation-building (Bur, 2010). With the development and expansion of highway infrastructure from the 1950s onwards, railway-based industry moved out of the city centre (Bur, 2010). In the 1960s vast viaducts were constructed around the railways to accommodate car and truck traffic. Today, the rails still connect the city's port to the freight network, but are quite underused. A CP spokesperson recently evaluated traffic on this part of the railroad to 'less than ten trains a day.' (Gladel, 2011) The train tracks were then literally enclosed in 1994 when a new bike lane was built alongside them, fencing off north-south pedestrian pathways across the train tracks. What was once the ultimate marker of an emergent nation-state, in both its generative qualities as well as through its participation in colonial settlement and land enclosures, is now a physical obstacle between the densely populated neighborhoods of Plateau Mont-Royal and Rosemont-La Petite-Patrie.

The lack of safe and easy access between these two neighbourhoods causes several problems for residents. As in many cities, the tracks mark a divide in wealth and uneven access to goods and services. In the eastern section of the city, this divide is especially visible, with very few stores, groceries, or services on the northern side of the tracks, whereas the southern neighbourhood's streets are lined with boutiques, parks, bakeries, and fruit and vegetable markets. The gentrified neighbourhood of Mile-End, which lies westward along the tracks, remains a pole of economic and artistic activity, but the closest metro is north of the train track, blocked by the fence along the tracks, and implicitly blocking circulation to and from the area.

Surveillance

The spring and summer of 2003 marked the beginning of increased surveillance and ticketing along the train tracks by Canadian Pacific. (Tremblay, 2004) As the land owner, CP is responsible for the security of the train tracks, and sends private police to patrol the lines issuing steep fines – CAD\$146 in 2012 – to anyone found on or crossing the tracks. From January to June 2010, CP police issued over 120 tickets. (CBC News, 2010) The threat of fines is itself enough to keep many people from crossing. The main reason cited for this ticketing campaign is safety and the accompanying, if unspoken, threat of litigation. However, only two injuries have been reported along this particular section of the railway tracks in the past nine years. These numbers could easily be contrasted to the high number of pedestrian injuries and deaths due to traffic accidents in the city. [1]

Despite the symbolic and literal enclosure of land through the train tracks and the increase of patrolling and ticketing along the tracks, people continue to pass through the various holes in the fence as they are opened, closed, and opened again at regular intervals. Recent tracking by Mile End district representatives estimates that 500 pedestrians and cyclists each morning sneak through holes cut into the chain-link fence along one 200 metre stretch to access the Rosemont subway station. (Décarie, 2011) These paths are so well-trodden that they are visible as lines of desire on Google maps. A local journalist describes in crude terms why many residents prefer to cross the train tracks than to walk through the underpasses, designed primarily for car and truck traffic: 'Underground viaducts – criticised for being too far apart from each other, as well as dark, dangerous, narrow, noisy and smelling of piss and pigeon shit- are the only legal ways to cross.' (Penhale, 2011) Formerly employed by the City of Montreal, urbanist Jean Décarie supervised several municipal studies on possible crossings. In a note written for a citizen group called Collective for level crossings, he recapitulates twenty years of observation on this section of the railway and concludes:

Unless the whole rail corridor is enclosed with walls, or police officers are positioned at each and every hole in the fence, day and night, this 'problem' will never be solved, because it is a false problem, that of applying an absolute and abstract rule disconnected from the reality of the situation. (Décarie, 2011: 5, translated by author)

To adequately deal with the problem of the tracks in Montréal, Décarie estimates that a crossing should be built every 500 metres. But to build these crossings the city needs CP's agreement. After beginning negotiations with the boroughs in March 2011, CP finally told the City's executive committee in May 2011 that it was not willing to build crossings on this

portion of the train track (Beauchemin, 2011). CP representatives continue to cite safety concerns as well as the need to maintain 'fluid' traffic (although the tracks are often used as a train parking lot, with cars left unmoved for months at a time). The only resort left to rectify this problem legally is for the city to bring the case in front of the Transportation Office of Canada.

What this case highlights is that the current organisation of property and land use is often inadequate to people's needs. Both public and private property is strictly regulated through inflexible laws that determine how and when people can use or access land. This problem was illustrated when local citizen Sara Serban contested her ticket in court in January 2012. The judge was sympathetic to the argument she presented – that crossing the tracks makes much more sense for urban circulation – but was nonetheless compelled to uphold the letter of the law. He said, 'Madam, you are not a criminal, you just crossed a train track,' but forced her to pay the fine anyway, adding 'I'm just applying the law' (Elourki, 2012, translated by author). The judge's comments highlight the way in which even long established practices of pedestrian and cyclist circulation in the city remain under the ultimate authority of government jurisdiction, no matter how absurd. All entry on CP's property 'without a legitimate purpose' (Railway Safety Act, 1985: 26.1) is forbidden. Regardless of the fallow nature and relative underuse of the tracks, or the quotidian and creative gestures of citizens to transform the land into a non-regulated and accessible area of the city, the law rigidly applies. This impasse highlights the problem of no common right to use land and resources.

However, daily practices overwrite jurisprudence, offering an alternative version of land use, even if unofficial, illegal and unrecognised. 'People will continue to make holes in the fence and trespass illegally,' one pedestrian was quoted as saying in the *Montréal Gazette* in 2010, 'because they want it to be a public space.' What this comment highlights is the way that this 'private property' has already become, in the social imaginary of the residents, a part of the commons.

Is it utopian to imagine that such practices as crossing these train tracks could be tolerated because they are grounded in a collective interest, even if they are forbidden by law and contravene a notion of property rights? Is it utopian to argue for a collective appropriation of a powerful company's private property? Within the daily movements of the city, an alternative understanding of access and rights is already asserted. By 'alternative', we understand a model that allows for non-conventional uses of the space, relying on a different kind of responsibility and collective practice.

The commons: a utopia of collective appropriation?

In recent years, the commons has been revitalised as a model for shared ownership and distribution of resources. Reacting to the expansion of privatisation into all sectors of society, some theorists are looking at the commons as a concept for resistance against global capital and commodification (Hardt and Negri, 2009; Klein, 2001; Buck 1998; Hess and Ostrom, 2007). Transcending the dichotomy of public and private, the commons invokes an alternate system of organising social relations, one that envisions a mechanism of social distribution beyond an individualist paradigm and reinstates the possibility for collective rights without reliance on the state.

A concept that stems from feudal, pre-capitalist societies, the commons may refer to (1) practices of delineating, accumulating, giving access, using common resources; or (2) forms of organisation, ways of being in common, collectives and social relationships that are based on common desires, conducts and ways of life. In their definition of the commons as a *practice of sharing*, as an activity, not a result, Hardt and Negri presume an understanding of the relationship between resources and people that 'does not position humanity separate from nature, as either its exploiter or its custodian, but focuses rather on the practices of interaction, care, and cohabitation in a common world, promoting the beneficial and limiting the detrimental forms of the common' (Hardt and Negri, 2009: viii). The commons, therefore, encompasses the modes of organisation and social systems that govern people's access and rights to a resource (Hyde, 2010). In fact, the question of managing a common resource cannot be separated from the presence and care of a responsible community, be it the population of a parish, or an online community.

The system of the commons stems from feudal times, where the commons was a social form of organising access to land and resources, a system that presumed the right of the poorest in society to provide for themselves. Commoners of a particular village or area had access to local land as a source of basic provisions; that is, they could use designated land for raising livestock, subsistence agriculture, and to heat, furnish or repair their houses. (Hyde, 2010: 28) Cultural theorist Lewis Hyde defines systems of communal tenure as a collective ownership, 'lands held collectively by the residents of a parish or village: the fields, pastures, streams, and woods that a number of people ... had the right to use in ways organised and regulated by custom.' (2010: 27) The actual enactment of this system was fraught with problems and inequities, but it still holds out an alternate version of thinking of land use beyond our current understandings of private and public ownership.

This system of land management underwent significant upheavals starting in the early 18th century. With the rise of industrial capitalism, the commons became enclosed, described by Hyde as 'a legally sanctioned act of appropriation' (2010: 30). The enclosure of the commons resulted in one seventh of all land converted into private property in England from the early 18th century to late 19th century. These laws of enclosure were also exported to British colonies: the Native Land Act was passed in New Zealand in 1865 and the Forest Acts of 1865 and 1878 in India extinguished collective rights to land tenure. (Hyde, 2010: 16) This period of enclosure has led to a situation today where collective ownership of land is quite rare across North America and Europe, continuing a colonial model that presumes only one of two ways to access and allocate land and resources that is, 'managed and regulated by states and other government authorities.' (Hardt and Negri, 2010: viii) In fact, our political imaginary seems to be completely impoverished by the dominance of either socialism or capitalism. Hardt and Negri remark that 'even though [socialism and capitalism] have at times been mingled together and at others occasioned bitter conflicts, [they] are both regimes of property that exclude the common.' (Hardt and Negri, 2010: ix). In fact the Canadian legal system, built upon colonial and capitalist paradigms precludes any other form of ownership or land access rights other than those of the state or private property [2].

Although in its actual historical enactment, common tenure and the forms of land use it enabled was strictly regulated, and often served to maintain social hierarchies, the commons nonetheless remains an alternate order of social organisation that can be drawn upon and reorganised for rethinking collective use, resources, and access in a contemporary context. The commons remains a compelling symbol of the possibility of collective responsibility. In the digital sphere, the commons has emerged as a powerful mode of organisation to fight for a system of collective access that is regulated through community activity and responsibility. The commons affords a potential for alternative perspectives on property, appropriation and regulation.

The Digital Commons

Over the last few decades, the commons has been revived as a tool for reframing collective action, governance and the management of resources, especially in the digital sphere. In its early years, the Web was envisioned as separate space, a distinct world, a 'no place' home to a borderless global community that could develop independently from the regulations and arrangements of the state. In his 'Declaration of the Independence of Cyberspace' (1996), the cyberlibertarian and poet John Perry Barlow addressed the 'governments of the Industrial World,' rejecting their authority and sovereignty on 'cyberspace':

You have no moral right to rule us ... the unwritten codes that already provide our society more order than could be obtained by any of your impositions. ... We are forming our own Social Contract. This governance will arise according to the conditions of our world, not yours. ... Your legal concepts of property, expression, identity, movement, and context do not apply to us.

This declaration was written in response to the enactment of the 'Telecommunications Act' in the U.S. As a founding member of the Electronic Frontier Foundation, Barlow continued to defend the idea of a separate legal order for the Web, a set of norms, rules and laws that emerged from the deliberations of the internet community instead of being imposed and controlled from outside by the power of business and national governments. Barlow's perspective reflects a technological utopianism that seems to have failed considering the growing body of national laws and international governance structures that undermine the project of maintaining the Web as an autonomous space.

Nevertheless, the hacker counterculture can still be characterised by its anti-authoritarian attitudes and its alternative systems of self-managed digital resources, created and operated by an international community of developers (GNU project, Linux, Mozilla, etc.). For example, around the free software and open-source movements emerged the model of copyleft, a licensing agreement that aims at maximising free sharing and republishing of digital content. An alternative to copyright, the copyleft philosophy promotes a different kind of property regime that emphasises the collective benefits of sharing rather than individual or corporate benefits involved in the enclosure of intellectual creation. The copyleft movement embraced the notion of commons, epitomised by the Creative Commons Foundation. Developed by lawyer Lawrence Lessig, the creative commons licences (in its most open versions) allow for digital contents to be appropriated by users, which means that authorship is still attributed to the creator, but other users are allowed to republish the content online and offline, to transform and distribute it, even for commercial purposes.

Is the commons a utopia?

The commons can be understood as a utopia, not because its enactments either in feudal times or the present day were or are the manifestation of a perfect society, but rather because it continues to hold out the possibility for better modes of social organisation. It becomes quite obvious, when looking at the digital commons, how utopian thought is infused into an enacted politics. Utopia, as it was originally depicted by Sir Thomas More, was an imaginary island enjoying a supposedly perfect social, legal and political system.

It remained an impossible ideal of social harmony and was summarily dismissed by many critical thinkers as improbable and undesirable in its unitary perfection. However, the contemporary revitalisation of utopia as an operable political concept distinguishes between a diagnostic and imaginative relation: 'Contemporary scholars tend to distinguish between the commonplace and somewhat restricted definition of utopia as a fictional place and the broader meaning of utopia as the wish for, description of, and attempt to create a better and good society.' (Gordon, 2005: 362) This includes an orientation towards 'a politics of everyday life, [which places] a premium on inventing and describing social arrangements designed to create an environment in which latent capacities for individual happiness can be fulfilled.' (Gordon, 2005: 363) One important aspect of utopia that converges these two tendencies is the way in which it mobilises a politics of futurity or hope as 'the need for a presence that is never achieved.' (Lefebvre, 2003: 131)

In this sense, utopia could be understood, following Henri Lefebvre, as 'an illuminating virtuality' (2003: 16), where it remains necessarily incomplete. In his book *The Urban Revolution*, Lefebvre developed a vision of utopia as a creative potentiality, a movement, not an achievement, that enables the transformation of everyday life through urbanity. He developed a theory of revolutionary everyday life that discussed the dialectic between the possible and the impossible, wedded together by a desire for complete societal transformation, resulting in a call for a revolutionary image of the future as a 'strategy of the possible.' (1967: 54) In other words, utopia in Lefebvre's thought no longer occupies the place of distanced perfection, but can be created through a movement between the possible and the impossible, between the constraints of the present moment and the desire for a revolutionary future.

Keeping utopia as a horizon provides a trajectory without resulting in totality or enclosure. Instead, utopia is an intellectual construction that works to denounce social inequalities in the world and trace new possibilities for transformation. Utopia is a way to challenge and think beyond contemporary (economic, administrative) rationality. For Ernst Bloch (1918), utopia is an active 'principle of hope'; to renounce to utopia is therefore to renounce to all hope. Hope in this sense can be understood as a 'margin of maneuverability' as Brian Massumi says. Hope, if

not connected to an expected success...starts to be something different from optimism ... [W]hen you start trying to think ahead into the future from the present point, rationally there really isn't much room for hope. [...]f hope is separated from concepts of optimism and pessimism, from a wishful projection of success or even some kind of a rational calculation of outcomes, then I think it starts to be interesting — because it places it in the present. (Massumi, 2005)

The force of hope comes from its ability to activate potentials in the present moment. Utopia could be understood under the same terms, as a concept that is not removed spatially or temporally, but as a particular kind of political orientation to refuse the boundaries of the 'realistic'.

Appropriation

Similar to the way in which digital material can be transformed and appropriated for multiple uses, the train tracks operate as a material manifestation of a politics of everyday life in a post-industrial urban space. Over the years, the train tracks have been used as an unofficial dog run, a place to take a nice stroll on a sunny day in summer or to ski along in winter, one of the best spots for graffiti art, random art projects, film and photo shoots, and the location for bands, jazz duets and at least one cellist to practice. The reinforced surveillance of the tracks has put a halt to a lot of these practices, but this space still remains a symbol of Mile-End and Montréal culture, exemplified by the 2002 album cover of the well-known Québec pop singer Jean Leloup, photographed walking on the railway with his guitar on its back. Creative activities overwrite and implicitly challenge the purely utilitarian function of this space, designed for the transportation of material goods. They introduce a shift toward other social and cultural functions, while at the same time contesting CP's exclusive rights to circulation.

The ability to appropriate the train tracks in part derives from its materiality: contrary to well-groomed urban parks, the vegetation there grows more freely, conveying the feeling of an almost 'wild' nature, building the imaginary of an open, undefined space because of its sense of abandonment. The biodiversity of this ecosystem is actually quite rich: groundhogs and fireflies are common, and in the summer, relates a journalist, 'you can catch sight of hares as big as cats jumping into bushes where the crickets sing loudly' (Tremblay, 2004, translated by author). The psychiatrist Jean-Dominique Leccia describes such fallow urban spaces as 'the last places in the city that are still marked by nature's imprint. In this almost primitive territory prevails a sort of misrule, materialised by elements of vegetation. It unconsciously evokes an epic journey more than a reality, a feeling of escape and liberty.' (Tremblay, 2004, translated by author)

Rules and regulation

There are other parallels between online enacted versions of the commons and what can be seen as common usage of the train tracks. Rather than operating through strictly regulated rules or laws, some digital forms of the commons are regulated through practices that can be modified in response to specific situations. For example, the Wikimedia Commons image database relies on a set of rules that should be conceived as guidelines or principles derived from consensus, rather than strict laws. On the Wikimedia Commons' page 'Image guidelines,' it states: 'remember ... rules can be broken.' Similarly, one of Wikipedia's five 'pillars', described on a page entitled 'Ignore all rules,' is the following: 'Wikipedia does not have firm rules.' This principle is further explained on an adjacent page: 'if a rule prevents you from improving or maintaining Wikipedia, *ignore it*...rules derive their power to compel not from being written down on a page labeled "guideline" or "policy," but from being a reflection of the shared opinions and practices of many editors ... following the rules is less important than using good judgment and being thoughtful and considerate.' 'Ignore all rules' does not mean that every action is justifiable, but that the spirit of the law matters more than its letter. The way Wikipedia's self-managed community of contributors relies on principles of judgment, consensus and civility, rather than a rigid set of rules, reveals the potential benefits of infringing upon established regulations, when they serve the common interest.

By referring in the previous sections to both the feudal land tenure system and the digital commons, we do not mean that these forms of enactment are equivalent. They belong to very different socio-political contexts, and do not apply to the same objects. Rather, we intend to describe inspiring examples of alternative regimes of property and regulation rooted in the practice of sharing and responsible judgement, that allow forms of collective use and appropriation. Advocating for a common right of passage on the train track can similarly be understood as legitimising the everyday act of crossing beyond legislative structures and property rights.

Ouvert/Open

Our first connection with the train tracks didn't stem from a newspaper article or a predetermined research project, but through our everyday lived experiences using and crossing the tracks. This practical immersion then developed into a reflexive research inquiry, using the city as a 'laboratory' to test possibilities of transforming the structure of

power between CP, the city, neighbourhood representatives, and residents. Our approach would then best be classified as an action-research project. The spring of 2010 brought with it a resurgence of surveillance and ticketing along the tracks, perceived as increasingly repressive by many people. In response, we initiated the project Ouvert/Open, with the goal of bringing together individual residents to collectively resist the train track enclosure.

Ouvert/Open is dedicated to the creation of spaces, practices and tactics for people to intervene in public policy and urban planning. The goals of this project may be summarised in three points: (1) to create a community network in order to share information and give a collective frame for scattered individual protest tactics; (2) to make our claim visible to the media and municipal and federal officials; (3) to position ourselves as an oppositional force in the structure of power linking political representatives and CP. The people who joined the movement shared practices of crossing and appropriating the train tracks, as well as common interests in developing safe and efficient ways to circulate across the railway. Using both traditional community organising and internet platforms, we intend to connect different forms of practices, folding onsite activism into online forums and web-based activities. But just as the intersection of the material and digital worlds creates a network of mobilisation, it also bears a set of contradictions as it exposes informal and illegal practices to commodification and surveillance.

We began mobilising people online with the use of social networks and collaborative web applications. The first initiative we undertook was to create an interactive collaborative map on Google Maps with the idea of sharing information about existing holes in the fence, to document the endless cycle of cutting, closing, and reopening. Although the map was consulted about 7,000 times, there was minimal user participation. This was mainly due to the interface. To update the map, one has to create an account on the website and learn basic application handling which, although simple, can be time consuming, and most people simply did not do it. Creating the map was a first step, but we then had to let people know about it. The most simple and effective way we could think of was to use the social media platform Facebook. In April 2010, we created a Facebook group called 'Passages sur la voie ferrée / Ways to cross the train tracks.' Within a week, about 200 people had joined, and today the group consists of more than 1000 members.

The Facebook group allowed us to foster a 'community of interest' (Williams, 1976: 75) around the practices and issues involved in crossing these tracks. Through this social platform, people started exchanging information on patrol routes and sharing their experiences of ways to cross the tracks (including dramatic stories of getting badly injured trying to jump the fence). This exchange of information addressed many topics. People posted questions and answers about how to contest fines; related stories of their previous

attempts to petition the city to do something about the problem; debated best practices of urban planning; made comparisons with similar situations in other parts of the world; and proposed plans of action both to inform a broader audience outside of Facebook and to pressure local authorities to find a solution. This shared repertoire of individual tactics and knowledge eventually coalesced into a collective action strategy, which resulted in a public event along the train tracks in June 2010.

In our use and understanding of the network, we folded online and offline activities. It was extremely important for us to engage 'offline' social networking: getting involved in existing citizen committee assemblies; spending hours on the tracks talking to people and collecting signatures for the petition; organising community meetings; attending municipal council meetings; organising artist competitions for feedback; making links to art and cultural industries in Montréal; and using the streets and lampposts as other spaces of visibility. Further, making connections with a long-established citizen organisation, the *Comité citoyen du mile-end* (Mile-End Citizens' committee), was instrumental to the continued pressure of the municipal and federal governments on this issue.

The networked community we gathered is both formal and informal. Offline, the little group of active members gave itself a name, *Collectif pour des passages à niveau* (Collective for level crossings). It is composed of residents and experts (including a lawyer and a retired urbanist from the City of Montréal) who meet regularly and collaborate closely to communicate with elected representatives and intervene in formal venues like municipal councils. Online, the community bonds are looser. Out of the 1000 people who joined the group, only a minority post information and participate in offline events, but the mere act of gathering online helps constitute a visible and active critical mass that is hard for local elected representatives to ignore. Additionally, representatives from the Mile-End district regularly post information about negotiations with CP, which can be seen, on the one hand, as a sign of proximity and dialog between the political sphere and civil society, and on the other, as a sign of recuperation of a community forum as a political tribune.

Online social forums, exemplified by Facebook, were used in the project Ouvert/Open because of the number of users (approximately 49% of the Canadian population use Facebook [3]) and the ability of the platform to trigger viral dissemination of information. But we can identify two sets of problems in using this medium. First, the project relied on Facebook, a commercial platform that commodifies the common activity of sharing information; second, it rendered clandestine practices visible and thus exposed to surveillance.

Commodification

Contrary to Wikipedia and other open source platforms, Facebook groups are not self-managed, even if they superficially appear as such. Administrators of a group can accept or reject new members, delete outrageous posts and send mass emails to the whole group, but they have no say in the design and commercial content of their page. Whereas the users of open source communities control their entire platform, from the technical aspects of the software to managing the content, members of Facebook are dependent on the company's decisions, oriented by its commercial strategy. On the group page 'Ways to cross the train track,' the section devoted to advertising is quite prominent, ranging from cosmetics to clothes, jewellery, travel agencies, credit cards and entertainment in Montréal. Facebook exploits this community of interest gathered around the issue of the train tracks by using it as a target audience for marketing products. Facebook can also decide to close down a group that is judged 'not active enough' and delete a user's account (the 2009 terms of service stated 'for any or no reason, at any time in our sole discretion, with or without notice').

Furthermore, Facebook's terms of service bind its users to agree that all the content they produce on the platform belong to the company, thanks to 'a non-exclusive, transferable, sub-licensable, royalty-free, worldwide license to use any intellectual property content'. In the new terms of service implemented in 2009, the company even claimed a permanent license to its users' content after they terminated their account. In reaction to wide protests, Facebook changed its policy and accepted to end its IP license on users' contents if they delete them, 'unless [their] content has been shared with others, and they have not deleted it.' In recent years, the exploitation of 'user generated content' by social media companies have being criticised by many civil society activists, artists and scholars. Artist Gregory Chatonsky describes this tension in a blog post entitled 'Web 2.0 Capitalism: participation, privatisation and substitution':

What we offer to these companies is something extremely precious, because in the very banality of some texts we post or pictures we disseminate, there is in the end the spirit of an age and the mere future of our history being constituted for the next decades. It is indeed a privatization of public memory. But by public we shouldn't understand something related to the State, but rather something related to individuals, to singularities, to multitudes (2012).

Public is defined here as part of everyday lived reality 'as something related to individuals, to singularities, to multitudes', which could be read as referring to a common memory,

created by the ordinary practices of sharing. Henri Lefebvre's revolutionary call to de-alienate everyday life is in contradiction with online platforms for social networking such as Facebook. Facebook functions, rather, as an anti-utopia, commodifying and exploiting the practices of everyday life for the benefits of a private company, through the rationale of neoliberalism. While Ouvert/Open aims at questioning the excesses of private property in urban space, it falls into a rather nasty contradiction by inviting its supporters to interact online through Facebook, thus passively participating in the privatisation of group members' personal data. For media theorist André Mondoux (2009), we have entered a dynamic where control and surveillance are integrated at the core of online social life.

Surveillance

Another contradiction that entangled the project was through the tensions of in/visibility. One of our goals with Ouvert/Open was to make visible the contestation of public space, valorizing and legitimating the alternate forms of land use happening around the tracks. However, visibility is both necessary and problematic for activist politics. There are risks involved in making previously clandestine activities more public, and thus more visible, as Crang and Graham point out (2007). They state in relation to artistic hybrid spaces that: 'these moves risk making what was formerly protected by its opacity and transitoriness, visible and recordable. As such, there may well be an issue where rendering our tacit sociospatial practices visible [archived, and searchable] is an uncomfortably close echo of commodified and surveillant systems' (812). In many ways, this hegemonic construction has been heightened through online networks, as pointed out by David Lyon (2006) and others. But, there are also ways in which visibility becomes necessary in activist practices. In other words, visibility acts as both *pouvoir* and *puissance* – both as an enabling force and a force of oppression. These strategies of making visible - although extremely useful tools of resistance – are not completely benign. Facebook posts allowed people to warn one another when and where they saw police hiding or giving out tickets, but it also rendered people more vulnerable to police or municipal harassment because they admitted to having illegally crossed the tracks. The collaborative map which documented when and where holes in the fence were made with the intention of increasing residents' ability to circulate across the tracks, but could also make it easier for CP officials to close up holes or to ticket more people.

The use of Facebook is also problematic due to its mechanisms of surveillance. Facebook forces users to provide 'their real names and information' and commit to keep their 'contact information accurate and up-to-date.' The never expiring cookies that Facebook places on its users' computers also raised concerns as to what kind of information the company should be

allowed to collect about its customers, including when they have logged out of the platform. These contested policies illustrate the ways in which regimes of visibility and surveillance are closely intertwined in social networking platforms, and how they can undermine the transformative potential of users' content.

Is it possible to overcome these contradictions? One could argue that we simply shouldn't use Facebook, and with good reason. However, it has also allowed us to collect and archive materials about the project, to disseminate information as a group, and, more importantly, to link with people who might not otherwise find out about the collective. There seems to be a more fundamental contradiction, though, that is much more difficult to work through, in the negotiation between official power and everyday anarchic practices of the commons, in the contested space of urbanity, as it is already highly regulated, and its appropriation by neoliberal systems of economic expansion, both online and offline.

Conclusion

What the challenge of this project has been is precisely this negotiation of official power with practices of impromptu events, clandestine activities, and the tactics of invisibility. In the event that our demand for level crossings for cyclists and pedestrians is met, we might inadvertently reinforce patrolling and control along the rest of the tracks. Legal crossings put in place a fixed, controlled and rigid use of the space, as opposed to the creative, transformative and spontaneous practices that occurred under the radar of CP or city officials. The efforts to formalise informal practices might in fact lead to more surveillance and threaten these practices. One of the strongest critiques of the project comes precisely from this rendering visible, and therefore legitimate, of overlooked urban space. As one list-serve responder put it:

I cross that track often and would be saddened to see it paved, lit up, and policed by real cops. It would be rather jarring and disappointing for anyone walking pensively along the tracks. I rather enjoy the idea of having to make a new hole in the fence every once in a while. A crossing would be built at the cost of tens of thousands of dollars by public works fat cats and co., rather than the obstinate weirdo who does it with a bolt cutter. It would dissuade taggers, campers, and lovers. It is safe and pleasant to cross the tracks as it is. If you get a ticket, burn it. [4]

The desire for pure opposition that this respondent expresses draws attention to the creative responses that can emerge out of invisibility. We are definitely losing something, a kind of creative element, by making the crossing official. And we risk aligning ourselves with the power that we are critiquing.

But considering the fact that, for the moment at least, official crossings seem a very remote possibility, what is held in the in-between unofficial space, what the project makes visible is how the commons is already enacted in the city. The commons provides a horizon of action for another kind of world, it works as a concept to provoke thinking away from the restrictions of current legal and social conditions, and maintains a place for different social relations and regulations. The train tracks show how these everyday actions of resistance to a rigid system of private and public ownership already exist. Everyday, creative tactics that disrupt and transform urban experiences, herald in the future as an alternate and already existing present.

Additionally, the formation of an online 'community of interest' opens up new hopes and potentialities for collective agency and the disruption of the status quo. But the outcome of this mobilisation through digital networks is uncertain. From land ownership to the ownership of social media, what is at play here is the overlapping of an old and a new order of control, as suggested by philosopher Brian Massumi. (2005) Current practices of resistance are subject to traditional mechanisms that control the movement of bodies in the city, in addition to the insidious power of to commodify and surveil everyday social experiences online. So what ethics should guide our actions as multiple contradictions unfold both online and offline? For Massumi, 'the ethical value of an action is what it brings out in the situation, for its transformation, how it breaks sociality open. Ethics is about how we inhabit uncertainty, together.' (Massumi in Zournani, 2005)

We have learned from this project that there is no pure (or purely oppositional) position to work from, and instead it is in the grey zone, in the liminal space that flickers between tactics and strategies, visibility and invisibility, online and material networks that current activist practice must engage in to envision new futures. And the commons maintains just such a place, one that remains a utopian vision of a world to come, while also being enacted simply in the act of finding a shortcut to get to work. The commons then is a utopia that exists slightly outside of the regulation of existing laws and infrastructure. As Henri Lefebvre says 'Of course! It's a utopia! Your short-sighted realism bounds you and betrays you. There is no thinking and no action without an image of the future, without a vision of the possible.' (1967, 45, translated by author) The commons remains, despite its contradictions, just such a vision.

Biographical Note

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Notes

[1] 'Over a five year period there were 5,000 injured pedestrians [...and] about 20 pedestrian deaths each year' in the city of Montréal. (CTV Montréal, 2011)

[2] The only exception to this under Canadian law is in regards to First Nations reserves and territory. There, systems of collective ownership prevail, but under a paternalistic system which severely delimits people's rights.

[3] This number is derived from 2011 Statistics Canada information on population and data on users compiled by Facebook.

[4] Excerpt from an email sent by a member of the list-serve 'Gathering for crossings on the train track', August 26, 2010.

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FCJ-144 Healthmagination: Anticipating Health of our Future Selves

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In 2010 General Electric launched an initiative called Healthmagination. On its website, GE declared that Healthmagination is about becoming healthier, 'through the sharing of imaginative ideas and proven solutions'. Looking to explore/exploit the growing field of health information technologies, GE declared that through sharing health information in the networked social space, we could imagine a future where medical conditions of our bodies – together with our identities - will be transformed and enhanced. Under the slogan of 'Imagination at Work', GE's advertising campaign invites us to imagine such future:

Imagination. It's the most powerful resource on earth. And at GE we are using it right now. To create innovative technology that will improve the health of our economy, the health of the earth, and the health of its people.

Featuring a multicultural assortment of people gazing at city skylines, test tubes, double helixes, wind turbines and other signifiers of scientific and technological progress, GE invites us to imagine a utopia where we can have an automatically rendered better life. This campaign illustrates how cultural visions of utopia are often signified through an unproblematic usage and development of technologies. More importantly, it introduces a notion of imagination as work – an immaterial labor that maximises our bodies' capacity to affect and be affected (Clough, 2007). This utopian world is enabled through the regime of anticipation, which combines the affective with the possible to produce future subjectivities (Adams, Murphy, and Clarke, 2009). Moreover, Healthmagination is an apt signifier of the emerging Health 2.0 movement - a growing effort to marry Web 2.0 technology, participatory discourse, and network subjectivity to health care and management. Through tracking, reporting and sharing of our health data we are transported into a utopian world where we obtain a mastery of our

future selves. In this essay, I argue that the investment in the health of our future selves creates actionable conditions for our present selves – a participation in the moral economy of the network, where subjects are bound by a morality that necessitates sharing of our data with others. In the utopia of Healthymagination specifically - and Health 2.0 in general - the vision of a future healthy self therefore is bound with the health of the network. Through the regime of anticipation, networked utopias of Health 2.0 produce risk subjectivities engaged within an affective investment in the neoliberal market economy.

In February 2009, as a part of its stimulus package, the Obama administration allocated \$19 billion dollars in incentives to jump-start the adoption of digital medical records (Lohr, 2009). This reflected a larger move to promote wider access and data integration in the health information technology field. Wal-mart, for example, made a push into the market for electronic health records by developing and distributing cheaper hardware and software technology for physicians in small offices (Lohr, 2009). At the same time, Google Health allows users to keep and send their information as a digital file, easily transmittable to the clinic or accessible online. Google has taken the quest for accessibility seriously, releasing a smart-phone application called Health Cloud, which allows users to always have access to their health information. The advertised benefit is the promise of centralised health information at users' fingertips (Farnham, 2009). The Office of the National Coordinator has also promoted the adoption of health information technology, and development of The Nationwide Health Information Network (NHIN) billed as a 'network of networks'.

These health information technology initiatives, which advance access and interconnectivity between users and clinics, are a part of a Health 2.0 movement traditionally defined as 'the use of social software and light-weight tools to promote collaboration between patients, their caregivers, medical professionals, and other stakeholders in health' (Sarasohn-Kahn, 2008). However there is more to Health 2.0 than the promotion of information communication technology and health care collaborations. While issues of access are important, Health 2.0 sees itself as a movement that stresses community building and patient participation, 'all with result of patients increasingly guiding their own care' (Holt, 2009). As such Health 2.0 positions itself as a part of what Deborah Lupton called 'the new public health', an approach based on socially oriented, community-based, and preventative aspects of health promotion (Lupton, 1999). She considers that the new public health constructs a neoliberal subject: 'a responsible citizen who is encouraged 'to become "subject to ourselves".... This includes undertaking self-reflection and self-improvement activities that dovetail with governmental objectives as part of our efforts to achieve individual success and happiness' (289).

As a result, the Health 2.0 movement positions itself as a participatory process, one through

which users of health information technology are reconstituted as responsible and active patient-citizens as evidenced by these definitions:

Health 2.0 defines the combination of health data and health information with (patient) experience through the use of ICT, enabling the citizen to become an active and responsible partner in his/her own health and care pathway (Boss etc, 2008)

Or

Health 2.0 is participatory healthcare. Enabled by information, software, and community that we collect or create, we the patients can be effective partners in our own healthcare, and we the people can participate in reshaping the health system itself (Eytan, 2008).

This sentiment is echoed throughout Health 2.0 discourse. Online communities such as PatientsLikeMe.com or CureTogether.com connect patients, provide a virtual space for support groups, but also mine patient data to affect medical research and trials. These sites, like access engines such as Google Health, fully embrace and use the participatory discourse of the Health 2.0 movement, and their supporters insist that health information technology and social media tools have had radical effects on the health care industry in general. For example, Shaw (2009) argues that we are witnessing a healthcare reformation equivalent of the Reformation:

Traditional paternalistic relationships between patients and doctors are being undermined in much the same way as the religious Reformation of the 16th century empowered the laity and threatened the 1,000-year-old hierarchy of the Catholic Church in Europe. The Reformation had irreversible consequences for Western society; the implications of the health -care reformation could also be profound.... In our age, the "bible" is medical information, the technology is the Internet, and the priests are the medical profession. The Internet has brought the canon of medical knowledge—previously accessible only in expensive textbooks, subscription journals, and libraries—into the hands and homes of ordinary people.

And in a New York Times article titled 'Logging in for Second, Third Opinion' Dr. Ted Eytan, medical director for delivery systems operations improvement at the Permanente Federation, opines 'patients aren't learning from Web sites — they're learning from each other'. The shift is nothing less than democratisation of health care, he goes on, adding, 'Now you

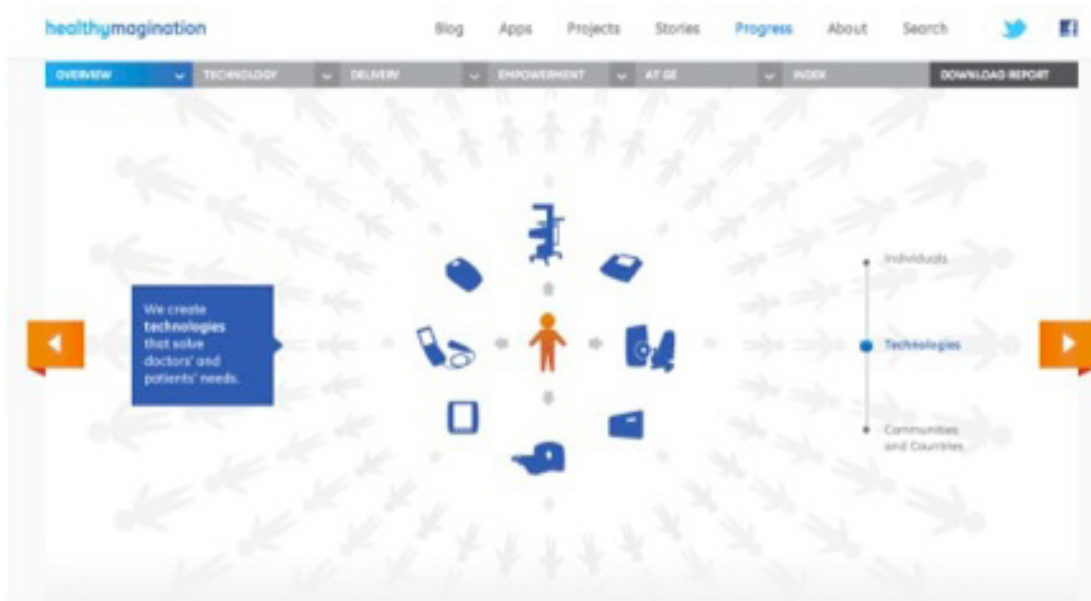
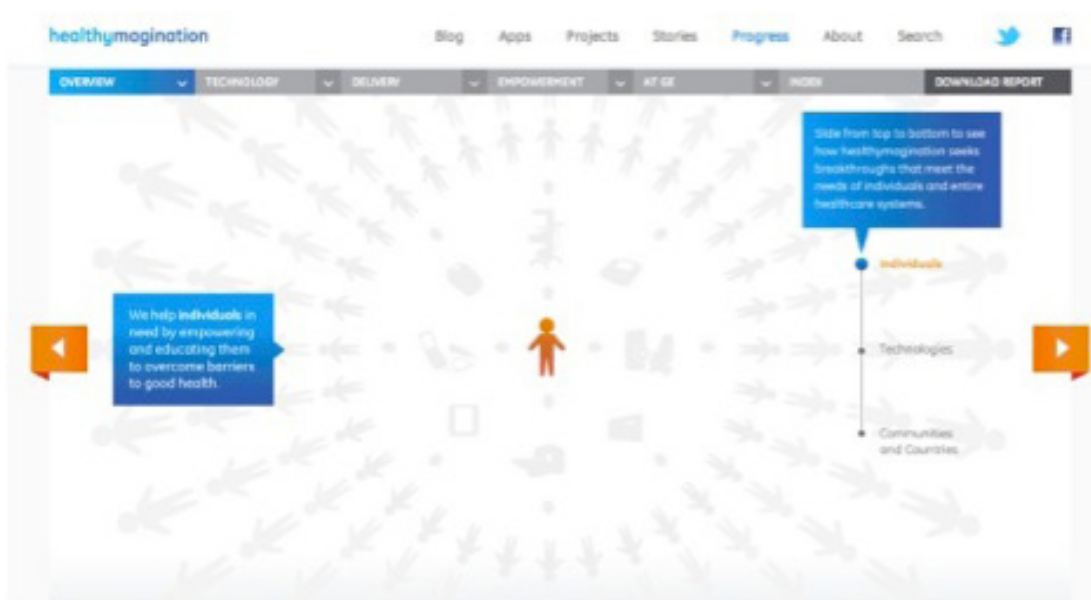
can become a national expert in your bedroom' (Schwartz, 2008). Here medical expertise is redefined as access and participation in web-based communities - a promotion of a networked utopia where health information is distributed and shared equally amongst all participants. The burden of care is then placed on responsible neoliberal citizen subjects (Lupton, 1999), as public health is individualised and reassigned away from institutions (Levina and Quinn, 2011).

The shift towards embracing what California HealthCare Foundation terms 'the wisdom of patients' positions health information technologies within a larger school of thought emphasising the social media-based wisdom of aggregates, or crowds. In this vein, Clay Shirky - an author of popular books on crowdsourcing and new media - argued at a 2008 Health 2.0 Conference that 'patients in aggregate behave very differently than when solo... what you do when you get a bad diagnosis - you fire up Google, find out who has what you have, and then talk to them. That ability, for patients to pool their resources, is a massive change to the health industry' (Davis, 2008). In a 2008 report for the California HealthCare Foundation, Jane Sarasohn-Jahn posits that the collective wisdom of patients, aggregated through social media technologies, could yield knowledge beyond any single patient or doctor. She argues that Health 2.0 is the result of trends in the accumulation and sharing of collective wisdom; 'a new movement that challenges the notion that health care happens only between a single patient and doctor in an exam room' (Sarasohn-Kahn, 2008). The inherent characteristics of social media technologies will generate better, more useful knowledge, as collective wisdom challenges dependence on a single expert opinion. Here the information collected through Health 2.0 practices is juxtaposed with the knowledge generated through medical institutions, as Sarasohn-Kahn describes an ideal information-sharing scenario:

When patients managing the same chronic condition share observations with each other, their collective wisdom can yield clinical insights well beyond the understanding of any single patient or physician. Similarly, when physicians share information with each other online, the results go well beyond the doctor's lounge — the traditional locale for exchanging clinical experiences and insights.

A promotional video for 2008 Health 2.0 Conference also advocates for collective participation and information aggregation. A retelling of the history of medicine from Ancient China to Web 2.0, the video welcomes us to Health 2.0 and states that 'Health is Information Technology; Health is US. Welcome to Health 2.0!' Using scenes of a terminal cancer patient blogging at CarePages.com the video echoes the sentiment of other Health 2.0 NGOs, physicians, and advocates. This is the claim that Health 2.0 movement is, at its core, a solution to institutional power inherent in the current medical system. Health 2.0 discourse presupposes that unrestricted access to information combined with social

media participatory practices will ultimately lead to liberation from the hierarchical, and often arbitrary, structure of the current health care system. The video's statement that health is information technology is a quite literal claim that access to information through social networking tools will not only liberate us, but will, in fact, make us healthy. The imagined visions of a healthy future are therefore tied to participation in these networks. Healthymagination echoes this point. Figures 1-3 illustrate how, in its annual report, GE facilitates a connection between individuals and networks of communities and countries, a connection mediated through technologies. Technologies might enable networked utopias, but it is through participation in the network that an individual becomes a part of those utopian visions.



figures 1 & 2.



figure 3.

A proper theorising of the Health 2.0 movement and its utopias needs to be grounded within the rise of a network society and, with it, a system of power relations necessitated by the emergence of globalisation and information technology (Castells 2000, Hardt and Negri, 2000). Castells (2000) argues that network society is characterized by the pre-eminence of social morphology over social action; logic that privileges network form, expansion, and information flows over any particular social interest – a prioritisation of the power of flows over the flows of power. As a non-linear power relation, which operates through decentralised relations of sociability, network power operates through regulations of standards as opposed to the enforcement of a sovereign will (Singh Grewal, 2008). This does not mean that network power is democratic, but rather that it is a diffuse system of control and regulation operating through a multitude of nodes. As a result, David Singh Grewal (2008: 9) argues, 'aggregate outcomes emerge not from an act of collective decision-making, but through the accumulation of decentralised, individual decisions that, taken together, nonetheless conduce to a circumstances that affects the entire group'. Network power is therefore a complex system of coordination and expansion:

First, that coordinating standards are more valuable when greater numbers of people use them, and second, that this dynamic – which I describe as a form of power – can lead to the progressive elimination of the alternatives over which otherwise free choice can effectively be exercised.... when these ideas are considered together, the central premise of network power is that the benefits that come from using one

standard rather than another increase with the number of users, such that dominant standard can edge out rival ones (Singh Grewal 2008: 9).

This example illustrates how Health 2.0 functions as constitutively social process of network power. Network power operates through decentralised relations of sociability, and as such it is always relational, always circumstantial, and always mutable. It also encourages relations of sociability in order to facilitate expansion. As Michael Hardt and Antonio Negri (2000: 166) argue, 'network power must be distinguished from other purely expansionist and imperialist forms of expansion. The fundamental difference is that the expansiveness of the immanent concept of sovereignty is inclusive, not exclusive. In other words, when it expands, this new sovereignty does not annex or destroy the other powers it faces but on the contrary opens itself to them, including them in the network'. The power of the network is in its continuous and constant growth and openness to divergence and difference (Terranova, 2004). This does not make the exercises of power benign; indeed network power operates through incorporation of dividend elements. Nothing can or should be outside of the network (Galloway and Thacker, 2007). Therefore participation in networks requires a commitment toward incorporation in the systems of network power. This commitment is enacted through a donation of the vital lifeblood of the network – information. Whereas networks function as control apparatuses, information gives control its material existence; it is what makes control matter (Deleuze, 1995). Alexander Galloway and Eugene Thacker (2007) argue that protocol – a horizontal, distributed control apparatus that guides formations of networks – functions in computer and biological networks when it directs the flow of information. In that sense, 'information is the concept that enables a wide range of networks – computational, biological, economic, political – to be networks. Information is a key commodity in the organisational logic of protocological control' (Galloway & Thacker, 2007: 57). Generating information gives networks capacity to grow, to regulate, and to circulate. This is the underlying logic, or protocol, of the network. Information flows in the network are not inconsequential; they alter topologies, relationships, and identities. Tiziana Terranova (2004) adds that 'the rise of the concept of information has contributed to the development of new techniques for collecting and storing information that have simultaneously attacked and reinforced the macroscopic moulds of identity' (Terranova, 2004: 34). Therefore, a constant movement of information in networks encourages volatile spaces, random relationships, and in-flux identities. In the control society, you are your information. Deleuze (1995: 80) points out 'the digital language of control is made up of codes indicating whether access to some information should be allowed or denied. We are no longer dealing with a duality of mass and individual. Individuals become 'dividuals', and masses become samples, data, markets, or "banks"'. As a 'dividual', the corporeal self can only know the materiality of its existence through data. The data body is distinguishable from a corporeal experience only by the virtue of translation of bodily experience into transferable and alterable data sets. These data sets make the promise of future health imaginable, manageable and actionable in the present. Moreover, identity constituted by and through these data sets is identity in-flux. It can always be changed and altered. More

importantly it can only be understood in the context of other data. Therefore, in the control society, individuals can understand themselves only in terms of relationship to others in the network. This carries enormous consequences in construction of network utopias. In order to participate in the utopian visions, and, in our case, to imagine a 'healthy' future and to engage in the very functioning of Healthymagination, individuals must consent to the logic of the network power in the present moment. The investment in the health of our future selves creates actionable conditions for present moment selves – a participation in the moral economy of the network, where subjects are bound by a morality that necessitates sharing of personal data with others. This introduces a new - post-network - care of self: one that irrevocably ties the health of the individual to that of the network.

GE's Healthymagination creates a utopian narrative, promising affective rewards of health, fun, and ease in the 'imagined' future. Its mission statement states:

Healthymagination is about becoming healthier, through the sharing of imaginative ideas and proven solutions.... GE created Healthymagination to gather, share and discuss healthy ideas. Because healthymagination is about becoming healthier together [emphasis added], it takes the form of multiple projects that you can participate in, whether you're looking to change your lifestyle or fine-tune your approach to health. Making healthy decisions should be easy...and fun.

What particularly situates this utopian narrative in network culture is the ideal of social collective. For example, CureTogether - a Health 2.0 forerunner in the field of self-tracking and data donation - is an online service that allows users to track their health data, alongside others, in hundreds of conditions ranging from 'depression' to 'aging'. On the 'About' page, the company is described:

Imagine patients around the world coming together to share quantitative information on over 500 medical conditions. They talk about sensitive symptoms and compare which treatments work best for them. They track their health. New research discoveries are made based on the patient-contributed data. This is happening at CureTogether, and we believe it can have a massive global impact (About CureTogether, 2010).

Whereas in nationalist narratives, citizen bodies are discursively tied to that of the nation-state – a healthy soldier means a healthy country - in the network society citizen bodies serve as stand-ins for the network itself (Levina, 2009). Therefore, citizen bodies become

subject to the network logic that determines the network's health through expansion and growth. And this growth demands a constant flow of information. As citizen bodies become enveloped in the functioning of network power, the care of self is reconfigured in terms of how much information we donate to the network. The promises of a better and healthier network and, therefore, a better and healthier self rely on leveraging the present state of 'the possible' into an optimal future. These are a part of what Adams, Murphy and Clarke (2009) calls the regime of anticipation. Anticipation is important to any imagining of possible futures, as 'anticipation is the palpable sense that things could be (all) right if we leverage new spaces of opportunity, reconfiguring "the possible"' (246). Anticipation sets up a moral economy 'in which the future sets the conditions of possibility for action in the present, in which the future is inhabited in the present' (249). Utopian visions necessitate an active positioning toward the future; it becomes a moral responsibility of citizens to secure their 'best possible futures' (256). Therefore, a theoretical consideration of utopia necessitates a consideration of present actions required to secure that possible future. I argue that the future networked utopia is reliant on present data sharing to assure future growth and expansion. Therefore a moral economy of the network is an imperative of constant and consistent data sharing. We are offered a utopian vision of healthy networks and, by extension, healthy citizen bodies. In fact, as illustrated above, narratives of good citizenship abound in the Health 2.0 discourse. These narratives are directly relatable to the primary objective of Health 2.0 to enable technologically mediated information flows from individuals to the network. For example, Healthymagination has launched several phone applications that enable individuals to track and share their sleep patterns (Sleep on It), mood (Moody Me), and pregnancy (I'm Expecting). The link between data sharing and well-being is made explicit in these – Moody Me's slogan is 'Have More Happy Days!' The latest application in the series is Fit Frenzy that beckons individuals to 'get in great shape and have a blast doing it! Get motivated by joining your friends in exercise challenges!' (Figure 4) Exclamation signs abound in networked utopia.



figure 4.

These utopian narratives depend on a present imaginary, which combines the affective with the possible to produce a future self (Gregg and Seigworth, 2010). For example, another Health 2.0 start-up, HealthTap, whose mission is to empower through data collection and donation, promises

At HealthTap, we are committed to creating a healthier, happier world – one decision at a time [my emphasis]. We envision people everywhere making confident, informed, fact and data based choices that maximize their health and improve their well-being. We see a future of true individualized medicine, where people’s increased control of their health reduces anxiety and increases optimism. (Vision/Credo, 2010).

In this case, the affect is future oriented, it promises to create happiness and increase optimism at an unidentifiable future point in time. As Sarah Ahmed (2010) argues, the promise of happiness is what allows happiness to be out and about, in other words, happiness, and its affect, is always future oriented. The promise of happiness is contagious and contingent (Ahmed, 2010). As articulated by another Healthymagination slogan ‘Good Health is Contagious’ the promise of happiness, while future oriented, always summons a present moment citizen orientation toward the network –good health is contagious because information about health is always shared within the network. As Seigworth and Gregg (2010: 3) argue ‘the capacity of a body is never defined by body alone but is always aided and abetted by, and dovetails with, the field or context of its force relations’. The state of becoming is contingent on others, so in the promise of a happier future we enable network health in order to, someday, guarantee ours.

In short, anticipation becomes a moral obligation of good network citizenship. As Adams, Murphy, and Clarke (2009) write, ‘the obligation to “stay informed” about possible futures has become mandatory for good citizenship and morality, engendering alertness and vigilance as normative affective states.... Anticipation is not only an epistemic orientation toward the future, it is also a moral imperative, a will to anticipate’ (254). A moral imperative of anticipation, when manifested through network narratives, obligates data collection and sharing, but also necessitates a positioning toward the present day subjectivity of its citizens. It requires us to think of ourselves as risk subjects. In fact, risk subjectivity is an essential part of network’s moral economy and an imperative part of imagining utopian futures. In order to be able to project into the future, we need to see ourselves at risk in the present. We must consistently imagine ourselves as always already diseased subjects. Nikolas Rose (2007: 20-21) argues that technologies of life construct narratives of susceptibility through which we construct our present and future risk identities:

The idea of susceptibility brings potential futures into the present and tries to make them the subject of calculation and the object of remedial intervention. This generates the sense that some, perhaps all, persons, though existentially healthy are actually asymptotically or pre-symptomatically ill. Technologies of life not only seek to reveal these invisible pathologies, but intervene upon them in order to optimize the life chances of the individual. Hence new forms of life are taking shape in the age of susceptibility, along with new individual and collective subjectifications of those, 'at risk', and, of course, new extensions of the powers of expertise potentially to all who are now understood as 'pre-patients'.

Risk subjectivity becomes a part of moral economy of the network because it justifies the affective labor necessary for consistent data donation and sharing. For example, when you become a member of CureTogether, you can select a condition, take surveys tracking symptoms you have and treatments you find most helpful, compare your answers with others in your condition, and see how various treatments rank in effectiveness. You can participate in daily tracking, a feature of the forum that monitors weight, sleep, exercise, caloric intake, and other events using day-to-day calendar. You can also choose to fill out lab reports – a feature that asks users to essentially report their blood tests. These multiplicities of data donation are time and labor intensive. Therefore, there has to be an affective value to these acts. As we imagine ourselves as risk subjects or pre-patients, we are affectively bound to the network: our future well-being is tied to those of other risk subjects. This connectivity is illustrated by a Healthymagination advertisement that shows doctors across the globe asking their patients to say 'Aahh...'. As images of children and adults flash across familiar and remote locations, 'Aaahs' combine to create Beethoven's 'Ode to Joy'. The voiceover says 'At GE, we've dedicated some of the best minds, and most advanced technology to bring better health to more people. It's an idea we call Healthymagination, and we think it just might catch on'. Here each individual's health is literally and figuratively connected to others across the globe, such that their voices are formed together as one to sing a hymn to happiness.

In this essay, I argued that the investment in the health of our future selves creates actionable conditions for present moment selves – a participation in the moral economy of the network, where subjects are bound by a morality that necessitates sharing of their health data with others. This introduces a new, post-network, care of self that irrevocably ties health of the individual to that of the network. An imperative of anticipation, manifested through the network, obligates data collection and sharing and necessitates a certain orientation toward the present day subjectivity of citizens. By optimising risk subjectivities, Health 2.0 narratives ask us to imagine a future where we are most happy and healthy. But healthier and happier to do what? What is to be done with our optimised future subjectivities? According to the logic of Health 2.0, and arguably network culture as

a whole, these optimised future selves need to be made productive in the present, which means that network utopias require an engagement with neoliberal market economy. The moral economy of the network produces risk subjectivities and also embeds them within particular economic strategies of neoliberal governance. As Brian Massumi (2005) argues:

Neoliberal governance goes hand in hand with a culture of risk. It is an art of dosages, knowing when and how much to intervene to avert accumulations of danger and sudden breaks. When action is necessary, its aim must be to recalibrate the market's self-regulation... This form of capital is unqualified. It is whatever-activity, measured not in labor-time but in life-time. Productive powers shade into powers of existence.... Productive powers are now growth factors, powers to be, becoming.... Whatever amplifies an individual's productive powers eventually settles into a reinforcing systemic adjustment, through a higher-equilibrium seeking multiplier-effect contributing to the health of the economy. Whatever amplifies an individual's productive powers is thus an economic factor..., whatever an individual does in life becomes an economic factor. The system runs on life capital, 'human capital' (2).

As far as neoliberal governance and the production of human capital are embedded within network practices, they are also tied to the imagining of future utopias. A will to anticipate the future relies on certain market predictions and assumptions. Gary Wolf, a co-founder of Quantified Self, a web company and a movement that encourages people to track their data - writes, 'for many self-trackers, the goal is unknown. Although they may take up tracking with a specific question in mind, they continue because they believe their numbers hold secrets that they can't afford to ignore, including answers to questions they have not yet thought to ask' (Wolf, 2010). Here moral imperatives of risk subjectivities are specifically tied to productivity and epistemology. It is impossible to know the future, but it is possible to be a productive working member of a networked utopia. As a project dedicated to optimising worker health states, 'being part of a winning team is usually a good feeling, particularly in the workplace. In a global survey of 554 executives, there is a striking correlation between businesses that are performing well relative to their peers and their relative levels of employee happiness' (Figure 5). As Sarah Ahmed (2010: 30) argues, 'to explore happiness using the language of the affect is to consider the slide between affective and moral economies'. I would argue that networked utopias represent unique spaces where this slide becomes most evident. To engage with utopia is to embrace a certain vision of the future – to form an affective attachment to something that can never be. And to be a good citizen of the network is to engage in moral and economic practices of data sharing, to see our self as a risk subject always dependent on the network for future health. Therefore, network utopias are interesting not because of what they reveal about the future, but rather what they say about our current moral and ethical obligations to self and others.



figure 5.

Biographical Note

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FCJ-145 Temporal Utopianism and Global Information Networks

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There is no such thing as utopia. But without utopianism we cannot begin to address some of the global political problems that the first decade of this millennium has magnified. This is manifest in a widespread perception of increasing environmental degradation, a seemingly permanent state of emergency in the so-called 'War on Terror' and growing instability in the world economy. How to explain this contradiction? Even those intellectuals like Mary Midgley (1996; 2003), who skilfully dismantle the idea that utopia could ever be possible or even desirable, believe that a conception of a perfect society, however naïve and flawed, is a useful motivation for progressive political activity: 'If we try to work with a world-view which shows us only the complexity of existing facts, we lose our bearings and forget where we are going' (Midgley, 1996: 25). This is all the more important when we consider the capacity that utopianism has for mobilising people, not only for progressive political projects but for more reactionary ones. [1]

This paper will begin with an analysis of the genealogy of utopianism, central to which will be an exploration of the significance of concepts of time and space. It will explain in particular why in different periods time-based utopias are favoured; why, in others, space-based utopias are the norm. In relation to this, the paper will analyse the key debates within modernity about time and space. Through an exploration of two theorists in particular, Paul Virilio and Manuel Castells, it will be argued that the manipulation of time is one of the important aspects of modern societies. As such any discussion about utopia must have a temporal rather than spatial focus. In the early 1990s the rise of the network society led to the introduction of new social theories which were informational in nature, many of which were utopian. The crudity of many of those theories should not rule out utopianism as a useful concept and guide to action in our increasingly unstable world. This paper will therefore ask whether it is possible to fashion a temporal utopianism as a means of addressing some of humankind's most intractable

problems. This will be done with an analysis of the capacity of computer networks to effect political change, with a focus on global economics.

What is utopia?

Since the publication of Thomas More's *Utopia* in 1516, utopian writing has become so prominent that it now constitutes its own genre, confined not only to novels but also flourishing in academic discourse and politics. The resilience of this idea is hard to comprehend in light of the seeming epistemological impossibility of the realisation of such a society, reinforced by the dearth of successful empirical examples of utopia in practice. There is a whole body of literature that addresses the first issue, the complexity of which does not need repeating here (John Gray, 2007; Isaiah Berlin, 1991; Mary Midgley, 1996 and 2003). For the purpose of this paper there is, though, merit in highlighting the main arguments against utopia, namely: that it is simply not possible to resolve completely the tensions and contradictions in everyday life, especially where positive values compete with one another – in Isaiah Berlin's (1991: 12) famous phrase 'total liberty for wolves is death to the lambs'; that even if it were possible to eradicate all these tensions and contradictions, the removal of the human desire to compete and to make choices would make life very boring; political ideas that try to lift themselves beyond the quotidian reality of our lives tend to mutate into totalitarianism. (In relation to the latter point, it is worth citing Russell Jacoby's [2005: xiii] argument that anti-utopian intellectuals like Karl Popper, Isaiah Berlin and Hannah Arendt's disillusionment with Marxism, to which they were previously sympathetic, led them to criticise all utopian thinking; though Jacoby himself is not convinced by their arguments).

There is also little empirical evidence to support the idea that utopia can be realised in practice. It is unarguable that utopia has not been realised at a national or global level, but there are examples of attempts to form and sustain perfect societies at various times and places. In the USA, the counter-culture movement of the late 1960s and early 1970s established its own communes outside what it perceived as the military-industrial complex of the country at large, Judson Jerome estimating that these numbered around 10,000 by the early 1970s and contained some 750,000 inhabitants (Fred Turner, 2006: 32). But despite their egalitarian ideals, these communes found it difficult to escape the racial tensions that bedevilled wider society at that time and also relegated women to the margins (Turner, 2006: 76-78). While there are still some communes flourishing in the United States, the idea of opting out of society in contemporary America tends to be associated with the largely, though not exclusively, right-wing militia movement (Manuel Castells 2010b). Generally, it is hard to argue with Jacoby's (2005: 4) assertion that: 'The history of utopian communities is largely a history of failure'.

Is utopianism a futile political project?

That the seeming epistemic impossibility of building a utopia appears to have been empirically validated by the failure of utopian communes invites the question: why bother with utopianism as a political project? The logic of the above would seem to suggest that we can only answer such a question in the negative. However, what if we respond to this question with another one: what are the characteristics of a politics that has eradicated all traces of utopian thinking? One of the features of anti-utopian thought is that it struggles to offer a vision of society that is elevated beyond quotidian concerns (Jacoby, 2005: 54-57). But a latter-day anti-utopian like John Gray (2003; 2007) would not accept this as a problem, arguing that all grand political schemes, however well-meaning, are ultimately doomed to failure and therefore focusing on the quotidian is all we can do - Gray's arguments, like many other anti-utopians, are ground in a critique of the Enlightenment, not particularly unusual in our post-modern times.

Mary Midgley rejects this narrow view of politics, arguing that we need to think holistically in order to comprehend the complexity of human society. Commenting on Robert Nozick's *Anarchy, State, Utopia*, she writes that:

Of course Nozick is right to warn us against seizing on a single one of these visions exclusively and forcing its pattern on society. But he means to do more than that. He wants to dissuade us from using any such vast and remote views of ideals at all. He calls on us to take up a standpoint which is wholly empirical, realistic and dream-free (Midgley, 1996: 23; my emphasis).

The last sentence identifies the most problematic element of anti-utopianism in modern society. The entry into the academic mainstream of critiques of Enlightenment ideas specifically and the promotion of postmodernism generally have not led to more open societies; on the contrary, our working lives are increasingly bureaucratic, we are surveilled more comprehensively than ever before by CCTV cameras and electronic databases, and in Iraq and Afghanistan there has been a return to the type of imperial adventurism that the western world supposedly had long ago banished – not to mention the death and destruction caused by other conflicts fuelled by nationalism, religion and the struggle for resources. As discussed above, the increasing surveillance and bureaucratic control of our lives could be a result of what Midgley criticises. That is, it is the consequence of 'empirical' modes of organisation moving into the vacuum created by the increasing unwillingness of progressive politicians and philosophers to provide leadership based on vision. While anti-utopians would reject the view that their philosophy is in any way responsible for these

trends, the argument that they are the consequence of leaving the field of ideas open to political activists who do think in utopian terms is a strong one.

In relation to the 2003 invasion of Iraq, Gray (2003; 2007) argues that the Bush administration was not only motivated by the *realpolitik* of securing the region's oil supplies, but that its messianism in wanting to export western-style democracy worldwide was a manifestation of utopianism in action. But in equating all utopian thinking with its most egregious manifestations, Gray is blind to the potential that utopianism has in providing effective counter-arguments to the excesses of its most malign practitioners. Indeed, if Gray is correct that many of the problems in contemporary society result from faulty utopianism, then how might we counteract this? Gray would argue that we do this by rejecting utopianism outright. However, as Amartya Sen (2007) has so persuasively argued, the dismissal of Enlightenment thinking (which many anti-utopians equate with utopianism) as merely western universalism is not only wrong but it potentially deprives the oppressed of the world a useful conceptual tool in their fight for justice. In this sense, Sen thinks that universal values are more useful than what he describes as the 'solitarism' of identity politics. This is not to say that all anti-utopians practice identity politics - though some do. However, there is a danger in progressive thinkers' ditching of grand narratives, both as a means by which we understand the world and as a basis for political action. This danger is that those of our species (most of us?) who seek explanations of, and solutions to, their problems will be more susceptible to more reactionary ideas and movements. The latter are, of course, nearly always framed within a grandiose worldview. But if we are to fashion a utopia, what shape might it take? Central to this question is utopianism's complex relationship to time and space, to which the essay will now turn.

A spatial or temporal utopia?

Thomas More created the word utopia out of the Greek words *ou* and *topos*, to mean literally 'no place' (More, 1992: 3). Thus from the outset utopia had a spatial association, a view reinforced by More's Utopia being an island. Fredric Jameson has argued that this spatial element is important metaphorically for utopian thought, the island providing conceptual separation from, and thus a totality untainted by, other ideas:

Totality is then precisely this combination of closure and system, in the name of autonomy and self-sufficiency and which is ultimately the source of that otherness or radical, even alien, difference. (Jameson, 2005: 5)

It was therefore no coincidence that early utopias, like for instance, Francis Bacon's seventeenth century creation *New Atlantis*, were based on islands and/or on previously undiscovered lands. But while the nineteenth century witnessed an upsurge in utopian writing, it became less spatially and more temporally orientated, with novels like H.G. Wells's *The Time Machine* and Edward Bellamy's *Looking Backwards* being published.

What were the reasons for this temporal turn in the genre? Northrop Frye argues that it became virtually impossible after the industrial revolution in Britain to write about utopia without putting technology at centre-stage:

And because technology is progressive, getting to the utopia has tended increasingly to be a journey in time rather than space, a vision of the future and not of a society located in some isolated spot on the globe (or outside it: journeys to the moon are a very old form of fiction, and some of them are utopian) (Frye, 1992: 207).

This argument, though, is problematic in that it equates technology with progressive politics, smacking almost of technological determinism. Frye is on surer ground when he asserts that:

A certain amount of claustrophobia enters this argument when it is realized, as it is from about 1850 on, that technology tends to unify the whole world. The conception of an isolated utopia like that of More or Plato or Bacon gradually evaporates in the face of this fact (Frye, 1992: 208).

Spatial utopia and the computer network

There is a paradox here in that humans' apparent mastery of global place and space has developed in contradistinction to their inability to control time, a phenomena that has become seemingly more pronounced in our modern networked societies. Does this mean that the utopianism has shifted more decisively from a spatial to temporal register? If we think specifically of the genre of cyber-utopianism, the answer is no. The term cyberspace was coined by William Gibson in his 1984 novel *Neuromancer*, and much of this genre explores the new seemingly limitless space that the World Wide Web provides for exploration both physically and conceptually (Turner, 2006: 162-163). Yet much of this literature is dystopian in tenor. It is the realm of politics and business that much of contemporary utopianism is situated. [2] The idea that the World Wide Web as a space offers new ways

of doing business and politics is durable across genres. A good example is *Wired*. Devoted to all things digital, online magazine *Wired* is a platform for cyber-utopianism. The highly speculative nature of many of its articles means that *Wired* is influential in bringing utopian ideas about the development of the World Wide Web into mainstream American society and further afield. Indeed, many of *Wired's* writers, like Kevin Kelly, Nicholas Negroponte, and Chris Anderson have become highly successful in business, academia and journalism. And for many of these writers, space, and its supposed limitation in modernist form, is a crucial element of their philosophy. Thus in Negroponte's 1995 book *Being Digital* the author writes about how digital technology can release 'kids ... from the limitation of geographic proximity as the sole basis of friendship, collaboration, play and neighbourhood' and 'can be a natural force driving people into greater world harmony' (Negroponte, 1995: 230). Kelly's intellectual interests are too wide-ranging to do justice in this short section but suffice it to say that much of his writing is also concerned with the way in which cyberspace can overcome the supposed limitations of our modernist conception of space. Kelly (2006) champions the attempts by Google and others to digitise all the world's books, a classic example for him of how cyberspace can manipulate space by bringing together texts from locations around the world and putting them in one place, cyberspace, where they can be viewed by everyone. Chris Anderson's hugely influential article and book, *The Long Tail*, is based on a similar conception of the transformation of space:

Hit-driven economics is a creation of an age without enough room to carry everything for everybody. Not enough shelf space for all the CDs, DVDs, and games produced. Not enough screens to show all the available movies. Not enough channels to broadcast all the TV programs, not enough radio waves to play all the music created, and not enough hours in the day to squeeze everything out through either of those sets of slots.

This is the world of scarcity. Now, with online distribution and retail, we are entering a world of abundance. And the differences are profound (Anderson, 2004: 2).

Anderson's main argument is that traditional economic theories are not applicable to a world where there is an abundance of space, where the increasing immateriality of our goods mean that markets are no longer constrained by the incapacity of storage space and physical platforms to expand beyond a certain point without investing in huge amounts of capital and acquisition of land. One of the most popular expositions of these ideas is Thomas Friedman's (2006) *The World is Flat*, a paean to the virtues of the supposed new, frictionless capitalism.

Do these new tendencies suggest that we should now think of utopianism only in spatial terms? I would argue not. Most of these valorisations of the new economy were written before the global downturn in 2008. In this sense, they lack empirical validation. The most crucial aspect of their empirical faultiness is in their relation to space, which results from a fundamental mis-reading of computer networks, whose relationship to space is a little more complicated than the supposition that these provide limitless capacity for the storage and dissemination of information. This is not to say that the World Wide Web, like earlier communication technologies before it, has not fundamentally re-altered our concept of space, but it has done so in a far more subtle way than Kelly, Anderson, Negroponce and Friedman have suggested. But before this is addressed in a comprehensive way, the essay will first discuss some earlier theoretical formulations of the relationship between space and time in what Anthony Giddens (1991) refers to as the period of 'high modernism'.

Space in High Modernism

As the earlier discussion on the genealogy of utopianism suggests, since the beginning of human history the triangular relationship between human beings, time and space has been constantly, if at times imperceptibly, re-calibrated. This means that any re-calibration wrought by our newest communication technologies should be viewed within the context of this longer history of change, rather than as a unique intervention. Giddens (1991) argues that the major difference between pre-modern and what he refers to high modern societies is in the way in which time and space have a close relationship in the former, but are separated in the latter. The consequence of this for social organisation is that, in the latter, institutions and practices become 'disembedded', that is to say 'lifted out' of what previously was their specific locale (Giddens, 1991: 17-18). Globalisation has accentuated this distancing and disembedding, though as he was writing in 1991, Giddens would not then have been able to appreciate the extent to which the World Wide Web would accelerate this trend.

Zygmunt Bauman (2000) argues in a similar vein, though his preferred term 'liquid modernity' emphasises the fluidity of contemporary social life. He provides further explication in his contrasting of 'heavy modernity' and its successor, 'light modernity' (Bauman, 2000: 113). The former is dependent on heavy machinery generating large products which endure over time and in working environments where the relationship between employers and labour is, if not stable, mutually dependent and long-term. In the latter, the emphasis is on knowledge work with its production of things like software, where employers need no longer be tied to labour beyond the short-term (Bauman, 2000: 116-117). For Bauman, the most important factor in this transformation is humans' conquering of space. But Bauman is not referring

to all humans here: the 'fluid' nature of modernity enables capital, employers and some employees to escape the constraints of space, but their mastery depends on the inability of the majority of people to do so:

People who move and act faster, who come nearest to the momentariness of movement, are now the people who rule. And it is the people who cannot move as quickly, and more conspicuously yet the category of people who cannot at will leave their place at all, who are ruled. Domination consists in one's own capacity to escape, to disengage, to 'be elsewhere', and the right to decide the speed with which all that is done – while simultaneously stripping the people on the dominated side of their ability to arrest or constrain their moves or slow them down. The contemporary battle of domination is waged between forces armed, respectively, with the weapons of acceleration and procrastination (Bauman, 2000: 119-120).

Like Giddens, but more explicitly, Bauman is arguing that the mastery of space by time enables instantaneous decisions to be made in business and social life, but that it only benefits those not tied to place.

Time in High Modernism (Manuel Castells's Timeless Time)

The capacity of time to conquer space, and the power that that gives it, is one of the major concerns of theorist of *dromology*, Paul Virilio. Virilio's work is unapologetically pessimistic, constantly warning the reader of the distinct possibility of a major catastrophe. [3] As long ago as 1977, he argued: 'The reduction of distances has become a strategic reality bearing incalculable economic and political consequences, since it corresponds to the negation of space' (Virilio, 1986: 134). Despite mentioning economics and politics, Virilio at this time was mainly concerned with the potential for nuclear catastrophe. Musing that in the future the warning time for nuclear missiles could be less than a minute, he argued that this would give heads of state no time to make decisions and hence would effectively lead to the automation of war; in other words, the evacuation of politics from the most important decision that a head of state would ever have to make (Virilio, 1986: 139-140):

If only yesterday the freedom of maneuver (that aptitude for movement which has been equated with the aptitude for war) occasionally required delegations of power up to the secondary echelons, the reduction of the margin of maneuver due to the progress of the means of communicating destruction causes an extreme

concentration of responsibilities for the solitary decision-maker that the Chief of State has become. This contraction is, however, far from being complete; it continues according to the arms race, at the speed of the new capacities of the vectors, until one day it will dispossess this last man. In fact, the movement is the same that restrains the number of projectiles and that reduces to nothing or almost nothing the decision of an individual deprived of counsel. The maneuver is the same as the one that today leads us to abandon territories and advanced bases, and as the one that will one day lead us to renounce solitary human decision in favor of the absolute miniaturization of the political field which is automation (Virilio, 1986: 148-149).

While his later work is also concerned with the dangers of nuclear catastrophe, he devotes more time than he does in his earlier works to the impact of instantaneity on global economics, arguing that the impetus towards deregulation and the creation of financial instruments based more on complex mathematical formulae rather than real wealth threatens to automate economics in the same way that military decision-making is increasingly automated, a phenomenon he conceptualises as the 'information bomb' (Virilio, 2000).

Despite this turn towards economics, Virilio's work is mainly inflected with an apocalyptic hue. While one can never be too complacent in a world where increasing nuclear proliferation could lead to maligned non-state actors getting their hands on nuclear devices, the world has learned to live, if always uneasily, with weapons of mass destruction. The USA and the UK's protracted, and many would argue unsuccessful, engagements in wars in Iraq and Afghanistan which seem not to differ much in military character from nineteenth century imperial ventures, fatally undermine the thesis that modern wars can be solely 'informational.' It is true that the increased use of pilotless drones controlled by operators back in the United States have proved to be effective weapons, but they have not been decisive in overcoming the resistance of those whose political will is stronger than their available technology.

However, amidst the global financial crisis of 2008 where, in the UK at least, the banking system was only hours away from total collapse (Andrew Rawnsley, 2010: 575-597) Virilio almost lived to see a major global catastrophe. While the application of his theory to the potential of nuclear catastrophe is suspect – it is more likely that nuclear weapons will be detonated deliberately by a rogue state or non-state actor than by accident – a collapse of the global financial system as it is presently constituted is not inconceivable. Any contemporary utopian project therefore cannot ignore the networked nature of global economics and the weaknesses therein, and who better to turn to for a guide to its complexity than Manuel Castells?

Like Virilio, Castells's intellectual interests lie in the study of the domination of global time over global space, which he encapsulates in the new concept of 'timeless time'; though he is more sanguine than Virilio about these changes. What is timeless time? Castells's theory of the network society is based on making a distinction between 'flows' and 'places'. In what he terms the 'space of flows' (of capital and expertise) timeless time rules, while in 'the space of places' (locations essentially on the margins of the global networks) modernist time prevails (Castells, 2010: 498). Similar to Bauman's idea that 'fluid' modernity provides elites with the mobility to disengage from their host societies, Castells (2010: 460-499) argues that it is those who live on timeless time who prevail over those who are tied to specific locales. Like Virilio, he argues that conflict, at least for those who adhere to the rhythm of timeless time, is swift, informational and results in few casualties for the victor; he uses the 1991 Gulf War and the NATO's defeat of Yugoslavia in 1999 with air power alone as examples to support his thesis (Castells, 2010: 486-487). And like Virilio, events in the last decade, where the Rumsfeld doctrine of waging wars with a small number of 'smart' soldiers died in the graveyards of Iraq, have provided an empirical rebuke to that part of his thesis; something Castells mentions only in passing in the 2010 preface to the updated second edition of his book (Castells, 2010: xli).

But he is on surer ground with his analysis of the informational nature of contemporary economics. Here, deregulation on a global scale and the creation of ever more complicated financial instruments to enable capital to exploit this new global architecture have conquered space to the extent that even the most powerful nation-states find it difficult to control their own economies. There are various reasons for this development, but arguably the most significant is the use of new information technologies:

[The first reason for the global financial crisis of 2008 was] the technological transformation of finance that provided the basis for the constitution of a global financial market around global computer networks, and equipped financial institutions with computational capacity to operate advanced mathematical models. These models were deemed capable of managing the increasing complexity of the financial system, operating globally interdependent financial markets through electronic transactions effected at lightning speed (Castells, 2010: xix-xx).

Is this Virilio's 'information bomb'? At the very least, it appears to validate Midgley's (1996: 23) warning of sleep-walking towards a society 'which is wholly empirical, realistic and dream-free' (my emphasis).

Whilst we now know that this financial positivism - the idea that the world economy can be precisely measured and successfully manipulated with complicated mathematical formulae

and advanced computer networks - is fundamentally flawed, is it possible to use these computer networks for more progressive ends? How might a new temporal utopianism address the systemic failures of our present global informational financial order? To answer this requires a consideration of the actual impact that these global movements of information have on individuals.

What to do?

Most traditional approaches to economics highlight the importance of information, particularly in relation to price transparency. In this sense, the writers at *Wired* and those of a similar ilk believe that we are approaching the point where new communication technologies can give consumers perfect information about every single product and thus form the perfect market. But the situation in our contemporary economies is more akin to that of Virilio's 'information bomb', where misinformation has the whip-hand over transparency, than to an environment where perfect information flows without hindrance. As Castells (2010: xx) argues in relation to the 2008 financial crisis:

new financial technologies made possible the invention of numerous exotic financial products, as derivatives, futures, options, and securitized insurance (such as credit default swaps) became increasingly complex and intertwined, ultimately virtualizing capital and eliminating any semblance of transparency in the markets so that accounting procedures became meaningless. ... financial markets only partially function according to the logic of supply and demand, and are largely shaped by "information turbulences", ... the mortgage crisis that started in 2007 in the United States after the bursting of the real-estate bubble reverberated throughout the global financial system. (my emphasis)

One of the most striking aspects of global cross-border trade is how much of it takes place *within* multinational corporations, up to two-thirds according to Nicholas Shaxson (2011, 12). The significance of this is that it enables 'transfer pricing' or, perhaps more aptly, 'transfer mispricing', where by 'artificially adjusting the price for the internal transfer, multinationals can shift profits into a low-tax haven and costs into high-tax countries where they can be deducted against tax' (Shaxson, 2011: 11-12; emphasis in the original). This is empirical validation of Castells and Bauman's argument that the most important effect of what the former terms 'the network society' and the latter 'fluid modernity' is that differential access to information enables global elites to further distance themselves from the vast majority of the citizens on this planet. [4]

Shaxson (2011: 279-281) argues that the best way of addressing the problem of differential access is through the introduction of new corporate duties to disclose information and global agreements at governmental level to improve the transparency of financial information. Following Bauman and Castells, Viktor Mayer-Schonberger (2009) argues that one of the most important ways in which our newest communication technologies encourage differential access to information is through their capacity, primarily through social networking and message boards, to provide detail on many more aspects of individuals' lives than would have been the case in the past. Mayer-Schonberger's book begins with a story of a 25 year old trainee teacher whose university refused to give her a certificate at the end of her training because it had discovered on the World Wide Web a photograph of her drunk (Mayer-Schonberger, 2009: 1-2). While this is an extreme case, it provides further empirical validation of Castells and Bauman's concerns about differential access to information. Mayer-Schonberger's (2009) solution is that there should be legally enforced expiry dates for online personal information. Taken together, and if implemented, Shaxson and Mayer-Schonberger's proposals would go a long way to address the differential access to information between global elites and the majority of the world's citizens. This would constitute temporal utopianism insofar as, to cite Bauman's (2000: 119-120) earlier point, it would help to redress the imbalance between those who in 'fluid modernity' can exploit their privileged access to information to 'move and act faster' and those whose access is more restricted.

There is, though, a strong argument against this approach: namely that these changes are in the gift of the self-same global elites who have benefited from the accretion of this power. Events since 2008 seem to have borne this out, with politicians from even the world's strongest economies seemingly powerless or unwilling to reform the global financial architecture responsible for the crisis. This calls for a consideration of the tactics that political activists can use to put pressure on global elites to reform the global financial system. This call for reform may appear conservative in its implied rejection of a revolutionary stance. While many of the most important global financial actors - like the world's most powerful nations, the IMF, multinational corporations and credit ratings agencies - are in need of structural overhaul, even very few of the most trenchant and eloquent critics of global capitalism believe that it is on the brink of collapse; [5] in this sense, political energy should not be wasted on impossibilist demands that bring either merely the self-satisfaction in the purity of one's ideas or the disillusionment of great hopes dashed. But such is the dearth of widely supported intellectual challenges to the present economic system, even the mere global popularisation of a serious alternative to the present system can be viewed as utopian.

Tactical media

But if we believe that reform is possible, what tactics might be used to help bring this about? Successful tactics must address the temporal logic of our existing global information architecture. That is to say, rather than trying to turn the clock back to a less technologically-saturated age, activists must find ways of using the global and temporal nature of the network to help to reform the system. Tactical media is adept in using the global information networks to cause temporary disruption. This is a manifestation of what physicist Brian Ridley (2001) argues: that in their temporal instability the dynamic nature of networks should be embraced for their potential to construct forms of public decision-making which can respond more rapidly than representative democracy to societal demands for change; a form of time-bound utopia if you will. Ridley's approach is compatible with the much earlier critiques of traditional utopianism offered by Russian author Yevgeny Zamyatin in the 1920s. Zamyatin stressed that traditional utopianism is static in nature – it is based on the teleological approach that once the perfect society has been attained then there is no further need for political change (Jacoby, 2005: 11-12). The contemporary environment can no longer endorse a traditional utopian activism, instead tactics must address the temporal as well as the spatial inequalities of the network.

What has come to be conceptualised as tactical media chalked up its first major success with the dropping of the multi-lateral agreement on investment (MAI) in 1998. The following year's WTO summit at Seattle attracted thousands of protestors, who used new media technologies to organise quickly *en masse*. But after their initial unpreparedness, governments have become more adept at thwarting mass protests at multi-nation meetings and, more importantly, the pace of the global expansion of capital did not abate. [6] There have been other tactical media campaigns that have captured global attention, 'Wikileaks' being one of the most prominent in recent years. As its name suggests, Wikileaks provides a receptacle for leaked, classified information, in the same way that Wikipedia provides a receptacle for amateur experts on all subjects. While the leaking of this information has caused some consternation among powerful nations, especially where it has revealed unflattering depictions of one country by another, it has not, though, really had much effect on traditional forms of international diplomacy.

The limited success of Wikileaks highlights the weaknesses of tactical media as presently constituted within the frameworks of utopia. While the revealing of damaging information can cause considerable harm to individuals, in and of itself it is less effective as a means of causing political change. Further, the extent to which it can lead to political change is not always progressive. Two examples will suffice. The revealing of ever more intimate details of politicians' private lives, as Matt Drudge did in relation to Bill Clinton in the mid-1990s,

can have the conservative outcome of focusing debate on individuals' behaviour rather than a discussion about the efficacy of our political institutions. Consider another example, that of London's *Daily Telegraph* revealing in painstakingly incremental fashion the details of British MPs' expense claims which it could be argued conveniently diverted attention from widespread calls for reform of the financial services sector. This is not to say that information transparency is not a good thing, but that it does not necessarily bring about progressive political change. In order to do that, disruption of the networks themselves is needed.

Jacoby (2005) argues that while anti-utopians rail against utopian blueprints, the best utopias are 'iconoclastic', being not concerned with detailing every aspect of the perfect society, but rather championing specific ideals to which all can aspire. Measures like Shaxson's and Mayer-Schonberger's may not appear to be all that utopian, but they are part of the terrain on which the political battles are being increasingly fought in the so-called information age and on which tactical media activists should now focus more of their attention. While it is not necessary to subscribe to the view that the rapid development of new media technologies has rendered traditional conceptions of 'right' and 'left' obsolete, their convulsive effect has made identification of specific causes to either traditional pole more difficult than would have been the case decades ago. An example of this was the heated debate over the introduction of ID cards in the UK, with opposition voices discussing the iniquities of government databases in seeming ignorance of the existence of powerful, unregulated databases in private hands. Indeed, many writers and activists, like Shaxson and Mayer-Schonberger, are waking up to the power of unregulated global information networks themselves. This is illustrated in the greater attention that has been given over the last few years to the information-gathering operations of large corporations, mainly but not exclusively Google, and their effect on wider society. [7] Tactical media, then, has a dual, if somewhat paradoxical, role to play in using global information networks as the most effective means of calling for the reform of those self-same networks to make them better serve the needs of those outside the global elites.

Conclusion

Why should we be concerned about (a utopian) reform of global information networks when tackling our ongoing economic crisis seems infinitely more important? The simple answer, as argued throughout this piece, is that it is difficult to separate the two. Also, as Scott Lash recognised as long ago as 2002, our immersion in new media technologies makes it harder to fashion a strategy from 'outside':

The point I want to make is that critique has always involved a transcendental, another separate space from which critical reflection can be launched. My argument in this book [Critique of information] is that such critique is no longer possible. The global information order itself has, it seems to me, erased and swallowed up into itself all transcendentals. There is no outside space any more for such critical reflection. And there is just as little time. There is no escaping from the information order, thus the critique of information will have to come from inside the information itself (2002, vii).

Tactical media is useful in disrupting the system temporarily, but those who control global information networks are becoming increasingly adept at thwarting activists. The key, then, to a utopian strategy is not to jettison the dynamic elements of global information networks, for the speed with which it sends information can be also be used against it, as it was successfully in the late 1990s. The success of a temporal utopianism within the networked society depends on progressive activists and academics being able to identify the aspects of networks which enable global elites to exist in a different, superior, temporality to the mass of humanity, and using those self-same networks as a means both of rapidly publicising these inequities and building fluid progressive coalitions in support of appropriate reforms.

Biographical Note

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Notes

[1] An example of this is John Gray's (2007) extended discussion of the significant influence of millenarianism on utopian thought throughout the ages.

[2] Like much of this contemporary literature, *Neuromancer* is more dystopian than utopian. Many anti-utopians like John Gray will argue that there is nothing to distinguish these terms from each other, because all utopianism in practice will lead to a dystopian outcome. This position is eloquently dismantled by Russell Jacoby (2005) and thus this essay will treat

utopianism and dystopianism as distinct entities.

[3] In one of his later works, *City of Panic*, his translator argues that while Virilio acknowledges the benefits of new technologies he is happy to 'let others crow about the advantages; he is here to point out the downside, the shipwreck that is part and parcel of the ship ...' (Rose, 2005: x).

[4] In recent years there has been much coverage in the world's media of the mobile telephone revolution in Africa, the subtext being that the so-called digital divide between developed and developing nations will in the not too distant future narrow to insignificance (see, for instance, many articles on this theme in the *Economist* in the last few years). But, as Shaxson (2011) illustrates, at the root of the continent's problems are the huge, largely secret, capital outflows which the networked global economy facilitates, something which will not be solved merely by giving Africans better access to digital technologies.

[5] See, for instance, Alex Callinicos's (2010) cautious concluding paragraph to *Bonfire of Illusions*, which begins: 'We are still a long way from overturning capitalism even in one country. Indeed, the more one seeks to elaborate on the shape of an alternative to capitalism the more one is overawed by the immensity of the task.'

[6] For useful accounts of tactical media's strengths and limitations, see Jeffrey Juris (2008), Geert Lovink (2008) and Rachel Raley (2009).

[7] Recent books which explore the implications of the impact of the growth of large commercial computer networks on wider society include David Berry (2011), Alex Halavais (2008), Zizi Papacharissi (2010), Mark Poster (2006) and Said Vaidhyanathan (2011).

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FCJ-146 Mannheim's Paradox: Ideology, Utopia, Media Technologies, and the Arab Spring

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Introduction

This article explores the complicated historical relationship between ideology and utopia in European thought, and what this relationship can teach us when faced with the exuberant promises that characterise much new media discourse. Discussion is divided into two parts. The first develops a detailed account of how this pairing of ideology and utopia has been theorised in the influential (if contentious) earlier work of Karl Mannheim, and how the work and ideas of Mannheim have been taken up (and critiqued) by more recent critics, including Paul Ricoeur, among others. The second then uses the example of the use of social and other media technologies during the so-called 'Arab Spring' of 2010-2011 as a basis from which to consider how applicable these twin ideas of ideology and utopia are to an examination of media technologies and the discourses that attend and structure our engagements with them. The paper concludes by considering the potentially productive theoretical possibilities that continue to be found in engaging with ideology and utopia in critical examinations of media technologies and cultures.

Karl Mannheim on Ideology and Utopia

The idea of utopia has a long and rich history. While it was popularised by Thomas More (2010) in his *Utopia* (first published 1516), the concept is much older (Sargent 2000: 8), stretching back via Plato (Pradeau, 2000) to Biblical Edenic times (Lecoq and Schaer, 2000) – and forward to

the present, despite various claims of its death in the face of postmodernity (Jacoby, 1999). One dominant conception of utopia is as referring to a perfect yet imagined place or state of things. This is the result of a playful elision on the part of Thomas More, with the title of his book containing a deliberate ambiguity: is it eutopia (from the Greek *eu*, well or pleasing, and *topos*, place) or is it outopia (a combination of the Greek *ou*, not, and *topos*, place, meaning 'no-where' or 'no-place') (Levitas, 1990: 2; Doxiadis, 1966: 88)? Utopias, according to this view, thus belong 'exclusively neither to the realm of the imagination nor to that of reality' (Donskis, 1997: 136). Rather, utopias exist in a kind of liminal space or middle ground, somewhere between the real or realisable and the imaginary or impossible (Ricoeur 1986: 301). This tension is commonly regarded as one of the constitutive features of all utopias, and is presumably what the Canadian literary critic Donald Theall was alluding to when he once spoke of utopia's 'ambivalences'.

A key strand of utopian scholarship concerns the (broadly Marxist) interest in negotiating the relationship between *ideology* and *utopia*. Perhaps the best-known (and certainly the most controversial) examination of the relationship between ideology and utopia is Karl Mannheim's influential study, *Ideology and Utopia* (1966, first published in German in 1929 and in English in 1936). Before moving to an examination of this text, it is worth beginning with a more general account of ideology and utopia. To give one example, according to utopian studies scholar Lyman Tower Sargent, ideology can, in broad terms, be understood to refer to:

a system of values and beliefs regarding the various institutions and processes of society that is accepted as fact or truth by a group of people. An ideology provides the believer with a picture of the world both as it is and as it should be, and, in doing so, organizes the tremendous complexity of the world into something fairly simple and understandable. (Sargent cited in Sargent, 2006: 12)

Building on this definition, Sargent writes that, 'as such, every ideology contains a utopia, and the problem with utopia arises when it becomes a system of beliefs rather than what it is in almost all cases, a critique of the actual through imagining a better alternative' (2006: 12).

I offer this definition in order to establish the distinctiveness of Mannheim's take on these ideas, especially with respect to the concept of utopia. Mannheim has developed a very particular (some might say, peculiar) understanding of ideology and utopia and the interactions between them.

According to Mannheim's formulation, 'both ideologies and utopias are ideas' (Levitas, 1990: 68), and are ideas which are 'incongruous with the state of reality within which [they] occur' (Mannheim, 1966: 173). The key point of difference between them is based on their respective social functions: ideologies work to sustain the present state of things; while utopias serve to bring about change. As Mannheim writes:

Only those orientations transcending reality will be referred to by us as utopian which, when they pass over into conduct, tend to shatter, either partially or wholly, the order of things prevailing at that time. In limiting the meaning of the term "utopia" to that type of orientation which transcends reality and which at the same time breaks the bonds of the existing order, a distinction is set up between the utopian and the ideological states of mind. (Mannheim, 1966: 173)

For Mannheim, then, form and content are not crucial elements of utopia, as they are in the 'liberal humanist tradition' (Levitas, 1990: 68). Rather, for Mannheim, what is most crucial is utopia's transformative function; utopia is, in short, a 'reality-transcending' (Turner, 2003: 33) idea that has the potential to 'break the bonds of the existing social order' (Mannheim, 1966: 173).

It is a formulation that is quite different from the view which labels as utopian that which 'can in principle never be realized' (Mannheim, 1966: 176-177). Mannheim has no truck with this position. 'Wishful thinking has always figured in human affairs', he writes. 'When the imagination finds no satisfaction in existing reality, it seeks refuge in wishfully constructed places and periods' (1966: 184).[1] One of Mannheim's key contributions to utopian thought, then, is to reconfigure the concept of utopias 'to mean those ideas that have some hope of prospect of realization' (Kumar, 2006: 174).

Underpinning Mannheim's model is an alignment between ideology and utopia and distinct social strata or classes: 'ideology is linked to dominant but declining classes, utopia to oppressed (or at least subordinate) and rising ones' (Levitas, 1990: 74-75). Thus, the larger argument of Mannheim's analysis of ideology and utopia can be summarised as follows. In contrast to ideologies which 'express the world view or perspective of a dominant group or class :

Utopias [...] are the belief systems or world views of groups which are excluded from a full realization of their socio-economic interests. Utopias outline and indicate a future alternative social order which is oriented towards their specific interests.

Political culture is the oscillation and conflict which takes place between these total world views, representing the interests of diametrically opposed social classes groups. (Turner, 1995: 719)

For Mannheim, it is only when these 'reality-transcending' ideas or 'wish-images' are taken up by certain (oppressed or subordinate) social groups and are 'embodied [...] into their actual conduct, and [they try] to realize them, [do] these ideologies become utopian' (Mannheim, 1966: 174).

Response to and Critiques of Mannheim's Ideology and Utopia

At the time of publication, Mannheim's book met with a quite hostile reception (drawing responses from the likes of Bloch, Marcuse, Arendt, Tillich, and Horkheimer, among others) and generating 'bitter dispute about the status of scientific ideas' (Turner, 1995: 721), as well as criticism of Mannheim's position vis-à-vis Marxism (for discussion, see Geoghegan, 2004; Meja and Stehr, 1990).

More recently, detailed consideration has been given to the 'inadequacies and inconsistencies' (Levitas, 1990: 74) that characterise his analysis of ideology and utopia. One such issue is that of how one determines whether these 'wish-images' of the subordinate classes crystallise into utopia, or fall back into becoming part of the prevailing ideology. This determination, Levitas (1990: 70) notes, 'can, as Mannheim recognises, only really be applied with hindsight':

Ideas which later turned out to have been only distorted representations of a past or potential social order were ideological, while those which were adequately realized in the succeeding social order were relative utopias. (Mannheim, 1966: 184)

This *ex post facto* determination of what is ideology and what is utopia – the fraught concept of 'realizability', according to which 'what is to be regarded as truly utopian [is that which is] realizable in the future' (Mannheim, 1966: 184) – poses a range of issues.

To begin with, the relationship between cause and effect is not easily established. As Levitas writes, 'to identify an idea as a utopia, we have therefore to establish not only that a change has occurred sufficiently in line with its content, but also that the idea was instrumental in effecting the change' (1990: 76). In practice, however, it is very difficult to do this, 'even with the benefit of hindsight' (76).

In addition, for Geoghegan (2004: 125), a 'past-orientated' conception of ideology, and a 'future-orientated' conception of utopia results in 'a rather one-dimensional, linear conception of the source of ideas'. In short, this 'unilinear and deterministic' (Levitas, 1990: 75) sequencing makes extremely difficult any attempt at determining 'what is utopian and what ideological in contemporary conjunctions' (Geoghegan, 2004: 125). Levitas (1990: 70) notes how, 'in the real world, ideologies may contain utopian elements and utopias may contain ideological ones, so that distinguishing between the two becomes [extremely] difficult'. Moreover, it is a means of delineation which leaves little room for ideas 'which may be neutral, or whose relationship to the present is ambiguous or paradoxical' (1990: 75).

For Geoghegan, a productive alternative (or corrective) to this issue might be found in the work of Ernst Bloch, who is said to dispense with 'Mannheim's rather stark binary distinction between "reality" and the transcendental, incongruent forms of ideology and utopia"' (Geoghegan, 2004: 130). Rather, for Bloch, ideology and utopia are 'deemed to be internal aspects of the movement of reality, informing consciousness and practices' (130); they 'grow out of the same soil, and interpenetrate in the conceptions of the age' (128). This is an especially helpful alternative perspective when it comes to thinking about the relationship of ideology and utopia to media technologies and will be returned to in the later discussion of the 'Arab Spring'.

A further issue with Mannheim's analysis is to be found if we consider the overarching project of his book. According to Levitas, this can be summarised in the following terms: 'all knowledge, and particularly all knowledge of the social world, is partial, selective and dependent upon the social location of the observer' (1990: 80). The difficulty here, she argues, is that it transforms the concept of ideology from 'particular to total and from special to general' (80). One of the implications of this is captured in what Clifford Geertz has famously termed 'Mannheim's Paradox' – a predicament that effectively questions the 'objectivity of sociological knowledge' (Geertz, 1993: 194). As Ricoeur explains:

Mannheim pushes the concept and the critique of ideology to the point where the concept becomes self-defeating, a stage reached when the concept is extended and universalized such that it involves anyone who claims its use. [...] We speak about ideology, but our speech is itself caught up in ideology (Ricoeur 1986: 159-160).

This particular dilemma has implications for the discussion of the role of social and other media technologies in the 'Arab Spring' that is to come later. Before turning to consider these implications, however, in the following section consideration will be given to how Mannheim's ideas have been taken up in the work of Paul Ricoeur.

Ricoeur on Utopia and Ideology, and the Problem of 'Realisability'

A later study that has sought to shed further light on the relationship between utopia and ideology is Ricoeur's (1986) *Lectures on Ideology and Utopia*, a series of 18 lectures originally delivered at the University of Chicago in the autumn of 1975. Ricoeur's study, which develops a detailed and largely sympathetic but nonetheless still critical treatment of Mannheim's earlier ideas, is of twofold significance to the present discussion. First, he breaks quite dramatically with the conventional Marxist position by rethinking the concept of ideology in non-pejorative terms. Second, he rethinks the relationship between utopia and ideology, as two concepts that are distinct but dialogic, with one working to adjust the other.

According to orthodox Marxist thinking, Ricoeur argues, ideology functions (simultaneously) as 'distortion' (Marx) and as 'legitimation' (Weber).[2] While Ricoeur does not discount either of these two, he argues that they overlay something altogether more fundamental and, indeed, constructive: the need inherent in all societies for 'a certain concept of the self-identity of a group' (Ricoeur 1986: 173). Thus, for Ricoeur, his argument is that ideology is fundamentally *integrative*; it is what preserves order:

The possibility that rhetoric can be integrative and not necessarily distortive [an idea he draws from the work of Clifford Geertz] leads us to a nonpejorative concept of ideology. If we follow this path, we may then say that there is something irreducible in the concept of ideology. Even if we separate off the two layers of ideology – ideology as distortion and as the legitimation of system of order or power – the integrative function of ideology, the function of preserving an identity, remains. [...] No group and no individual are possible without this integrative function (258).

It is only subsequent to this, Ricoeur argues, that ideology can function, as it is more conventionally understood, as distortion and as the legitimation of power.

So, if we agree with Ricoeur's argument, and ideology can be taken to be fundamentally

integrative (prior to any potential development in other directions), what, then, characterises the relationship of utopia to ideology? The understanding offered by Ricoeur is that ideology is what preserves order; utopia is what shatters order (179). Ricoeur's rationale for the distinction between ideology as maintenance of order and utopia as shattering order is born from his conviction that any 'judgment on an ideology is always the judgment from a utopia' (172). To illustrate this 'break' from ideology by utopia, Ricoeur gives it at least two different configurations. At one point, he draws from his own, earlier studies on literature to build a useful (albeit passing) comparison between ideology and 'picture' and utopia and 'fiction':

In a sense all ideology repeats what exists by justifying it, and so gives it a picture – a distorted picture – of what is. Utopia, on the other hand, has the fictional power of redescribing life (309-310; cf. 295 & 311).

At another point, Ricoeur conceives of the two – ideology and utopia – as different approaches to the 'larger role of the imagination in social life' (1986: 265). This constitutes a return to the Marxist problematic of ideology as imagination (271).[3] But in enacting such a return, Ricoeur offers the following refinement, quoted here in full so as to reveal the nuances of his position and the potential that takes this thinking beyond a simple order/shattered order dichotomy:

*On the one hand, imagination may function to preserve an order. In this case the function of the imagination is to stage a process of identification that mirrors the order. Imagination has the appearance here of a picture. On the other hand, though, imagination may have a disruptive function; it may work as a **breakthrough**. Its image in this case is **productive**, an imagining of something else, the elsewhere. In each of its three roles [integration, distortion, legitimation], ideology represents the first kind of imagination; it has a function of preservation, of conservation. Utopia, in contrast, represents the second kind of imagination; it is always the **glance from nowhere** (1986: 265-266; my emphasis).*

Thus, while there are difficulties with Ricoeur's notion of utopia as enacting a break from ideology (which will be addressed below), there is also great potential for media and cultural studies in his conception of utopia as a disruptive, productive imagining, a breakthrough, or glance from nowhere, as that which 'introduces a sense of doubt that shatters the obvious' (Ricoeur 1986: 299-300). For Ricoeur, the 'utopian mentality' is that which involves 'the effort to convince others, because imagination and not violence must make the break with the past' (287) – an insight that has special resonance in the discussion of social action and new media to follow later. The most fundamental characteristic that structures the relationship

between utopia and ideology, he argues, is a concern for the issue of power. 'My hypothesis', he writes, '[is] that both ideologies and utopias deal with power' (288). Power is also the point of distinction between them: 'ideology is always an attempt to legitimate power, while utopia is always an attempt to replace power with something else' (288) – even if it is a different form of power.

Nonetheless, Ricoeur is under no illusions that counterbalancing ideology (in all its various senses of integration, legitimation, distortion) with utopia does not make for an easy escape from Mannheim's paradox, from the 'oscillation between ideology and utopia' (312). Ricoeur's response to this dilemma is to propose that there is a two-way movement between them, with one correcting the more extreme elements of the other:

We must try to cure the illnesses of utopia by what is wholesome in ideology – by its element of identity, which is once more a fundamental function of life – and try to cure the rigidity, the petrification, of ideologies by the utopian element' (312).

The notion of utopia as a 'cure' to ideology (and vice versa) is an interesting one in that it suggests a certain fluidity or 'play'. Ricoeur extends this understanding of mutual correction to suggest that the 'oscillation between ideology and utopia' (1986: 312) should not be a circle but a spiral. That is, the negotiation of both should be governed by a commitment to some conception of progress; a faith in the future does not negate the challenges of the present. For Ricoeur, it is merely an 'avowal of honesty' to declare such a faith in progress (312); it is also why he maintains that 'we cannot imagine [...] a society without utopia, because this would be a society without goals' (283). Commenting on the work of Mannheim's contemporary, Ernst Bloch, Touraine asks whether such hope need be always future oriented, and whether in fact it is possible 'to combine a principle of hope and a focused attention on the present' (Touraine, 2000: 29). The appeal of such a convergence, he argues, is strong:

Philosophically, this thought is rich and powerful, since it is located at the juncture of two opposing currents: confidence in progress, and the necessity of the struggle to overcome social constraints (Touraine 2000: 29).

But, because of this juncture, there is a significant risk attached to such a project, as Ricoeur, in particular, is well aware (see Ricoeur 1986: 312). Negotiating this juncture, and seeking a way to 'understand how the circle can become a spiral' (314) leads Ricoeur to conclude his analysis of ideology and utopia by adopting the notion (borrowed from

Mannheim) of a 'criterion of appropriateness' (313). The need for some sense of determining what is appropriate comes from his argument that 'ideology is finally a system of ideas that becomes obsolete because it cannot cope with the present reality, while utopias are wholesome to the extent that they contribute to the interiorization of changes' (313-314). Thus, while Ricoeur acknowledges this 'criterion is rather difficult to apply' (313), he considers that 'it may be our only alternative' in maintaining a balance between the excesses of both ideology and utopia. It is, he suggests, a question of pragmatics, 'an ability to appreciate what is fitting in a given situation' (314).

Despite its appeal and potential usefulness, the difficulty with Ricoeur's final turn towards the notion of 'appropriateness' is that it is left undeveloped, a cursory conclusion sketched on the last half-a-page of a 314 page text. As a result, it is difficult to determine how this criterion might actually operate or be implemented in practice, particularly in the present context. For example, at what point do changes wrought by utopia become unequivocally 'interiorized'? And how does one determine what 'excess' is and for whom? Who does the deciding? Ricoeur's privileging of 'concrete' utopias and action and his scepticism towards the efficacy of discussion and (poetic) thinking to change things (1986: 298) seem to suggest that utopian 'excess' tends to lie for him with (the admittedly more literary) 'works of fancy, the impossible' (301). The irony of this position is that Ricoeur would, to some extent, thus appear to unwittingly return to the very same concept that he regarded as untenable in Mannheim's theories: the notion of 'realisability'. In a sense, this return is inevitable: any recourse to the notion of practical social and political change in discussions of utopian criticism invokes the spectre of 'realisability'.^[4]

This issue notwithstanding, what is productive in Ricoeur's engagement with utopia and ideology is his characterisation of utopia as the glance from nowhere (which suggests inventiveness) and the conception of utopia and ideology as mutually correcting (which suggests a certain fluidity or 'play').

Having considered the work of both Mannheim and Ricoeur, in the following section I use this material as a backdrop against which to consider the ongoing merit of, but challenges we face in, engaging critically with these twin ideas of ideology and utopia in unison, and in relation to new media technologies and cultures.

Media Technologies and the Arab Spring

In the second half of this article, attention will be focused on the use of media technologies, including social media (such as Twitter), in the events associated with the Arab Spring. The Arab Spring ought to be understood as constituting the most recent episode within what is, in fact, a long and complicated historical relationship between utopia and ideology and media and communications technologies (for discussion, see Pippin, 1995). For example, Carey (2009) gives a detailed historical account of ideology in the development and reception of the telegraph. Almost a century later, North American commentary on the early phases of computer-mediated communication and social interaction has been understood as influenced heavily by a particular technological (utopian) imaginary (both scholarly and populist) that has been termed the 'Californian ideology' (Barbrook and Cameron, 2008; Turner, 2006). In addition, the expanding body of scholarship on the electric and digital sublime (Giblett, 2008; Mosco, 2004; Nye, 1994) can also be figured as one which, at its heart, is concerned with exploring and explaining the tensions between utopia and ideology – as can the techno-boosterist hype and promise of technological and cultural transformation that often accompanies the arrival of any new media technology (see, for example, Burgess, 2012).

The analysis that follows further contributes to this rich history. Here the focus is on a consideration of the ideological and utopian dimensions of media technologies as they were taken up and used within events commonly associated with the Arab Spring – events which are of interest for the way that they appear to reflect Mannheim's understanding of ideology and utopia, while raising interesting questions, once again, regarding the fraught issue of utopian 'realisability'. Specifically, here I use the popular idea of a 'Twitter revolution' as a point of departure for a fuller examination of the use of media technologies within the Egyptian context. In building this examination, I draw on popular press reportage of events in Egypt (and elsewhere in the region) and academic analyses by critics with particular expertise in Middle East politics and the media systems of the region.

The term 'Twitter Revolution', apparently coined by Atlantic blogger Andrew Sullivan (Morozov, 2009), was first applied to the Iranian election protests of 2009, and subsequently applied to the revolution in Moldova of the same year (Lysenko and Desouza, 2012), and, alongside related terms such as 'Facebook Revolution', to events in Tunisia, Egypt, and Libya. There has been much debate about the role of technology in realising 'utopian' 'change' in these countries. In some quarters, the notion of a 'Twitter Revolution' has been met with considerable enthusiasm, particularly in the American mainstream press and broadcast media (see, for example, Grossman, 2009; and for discussion, see Else, 2012; 'Tweeting Toward Freedom?', 2011).

There have been a number of explanations for this enthusiasm. One scholarly argument, put forward by Christian Christensen, is that the notion of a 'Twitter Revolution' feeds a particular strand of new media discourse that is concerned with the potential of new media as 'liberation technologies' (see Diamond, 2010) and which posits a causal link (whether implicitly or explicitly) between technology use and the expansion of rights and other forms of economic and social development (Christensen, 2011: 237). Part of the apparent US TV network fascination with the 'Twitter Revolution' idea, it has been suggested, is due to two interconnected factors: (1) newsworthiness ('the International media loves [the] social-networking world' – Mishra quoted in Schectman, 2009); and (2) the networks' own lack of resources ('the international media doesn't have its members on the ground' – Zuckerman quoted in Schectman, 2009). Rich (2011) offers an even more pointed assessment: US TV networks 'can't get enough of this cliché' that social uprisings in the Middle East and North Africa were 'powered by the twin American-born phenomena of Twitter and Facebook' because it validates a 'form of implicit, simplistic Western chauvinism' that delights in the idea 'that two great American digital innovations can rescue the downtrodden, unwashed masses'. In other words, to return to Ricoeur's ideas, social media, when viewed through this particular lens, perform double duty: they are perceived as key 'utopian' instruments of social struggle for the repressed classes in distant lands; at the same time, such a perception is strongly ideological insofar as it serves to (re-)legitimate the relative power and privilege of the position of those who supply, observe, and comment from afar on the use of these technological instruments.

The notion of a 'Twitter Revolution' has also been greeted with considerable scepticism. For Mishra, 'the idea of a Twitter revolution is very suspect' (quoted in Schectman, 2009). Restricted access to these technologies by activists and the general populace in the countries involved is a key reason for this suspicion. In a widely cited statistic, technology commentator Evgeny Morozov (2011b) reports that there were only 19,235 registered Twitter accounts in Iran at the time of the 2009 uprising (equalling only 0.027 percent of the population). Similarly, Rich (2011) observes that, 'only some 20 percent of those masses [involved in the Egyptian protests] have Internet access'. In light of such statistics, 'inflated claims' about social networking lead, in Cottle's (2011: 651) assessment, to charges of 'media centrism and technological determinism' that detract from the full complexities that are at play in these conflicts.

Nevertheless, while it is now widely acknowledged that social and other forms of new media 'have not caused' the social unrest in the Middle East and North Africa, there is strong support for the view that 'they have most certainly aided it' (El Hamamsy, 2011: 456; Zuckerman, 2011; Idle and Nunns, 2011). As one commentator puts it, at very least, 'social media helped make the grievances all the more urgent and difficult to ignore' (Ghannam, quoted in El Hamamsy, 2011: 456). In discussing the relationship between the two, the key is

to 'not confuse tools with motivations' (Ghannam, quoted in El Hamamsy, 2011: 455), and to not decontextualise use of these tools. In relation to this last point, the Scandinavian media scholar Christian Christensen (2011: 247) remarks that what was most striking about the Swedish government's enthusiastic embrace of social media technologies as tools for change as a direct result of events in Tunisia, Egypt and Libya was 'the extent to which technology [and its use] was decontextualised'. Meanwhile, it was Slavok Žižek who was reported to have remarked of the Egyptian protests that 'it was immediately possible for all of us around the world to identify with it, to recognize what it was about, without any need for cultural analysis of the features of Egyptian society' (quoted in El-Affendi, 2011: 1269).

Following the arguments of a number of scholars writing from within media and communications and political science (broadly defined), here I want to argue (contra Žižek) that in order to better understand the events that collectively formed what has become known as the 'Arab Spring', and in order to gain a firmer grasp of the role of new media technologies within these events, and what both tell us about the relationship between ideology and utopia, it is important to (a) 'grappl[e] with the conditions of the countries themselves' (Anderson, 2011: 7), (b) understand how these specific events fit within larger international and historical contexts of political mobilisation and technology use, and (c) give consideration to the complicated strategies and tactics that are mobilised around media access during times of social unrest. Each of these will be addressed in turn in relation to the specific national context of Egypt.

Media Technologies and Revolution: The Egyptian Context

In an important essay that addresses the issue of country-by-country difference, Anderson (2011: 2) writes that, while poverty and unemployment were recurrent themes across the region, the conflicts in Tunisia, Egypt and Libya each 'reflected divergent economic grievances and social dynamics' and that 'the patterns and demographics of the protests varied widely'. In the case of Egypt, unrest was said to have been fuelled by 'the government's deteriorating ability to provide basic services and seeming indifference to widespread unemployment and poverty' (Anderson, 2011: 4), and was complicated by the involvement of an army that is respected but hostile to economic liberalisation and reform. The Egyptian case was also unusual insofar as, prior to the protests, it was a country that, by regional standards at least, enjoyed an 'unusually high tolerance for free expression' (5). Very different circumstances characterised events in Tunisia and Libya (Anderson, 2011), and elsewhere in the region (Al-Rasheed, 2012; Varisco, 2011; 'Chronology', 2011).

While there is the need to balance the role played by social media technologies as instigators of change against other contextual factors, there is also the issue of how the 'Twitter Revolution' rhetoric operates from a 'somewhat a-historical focus in digital technology' (Anderson, 2011). That is to say, discussion of the use of social media in Egypt ignores the longer history of technology use in political protest in that country (including the role of the telegraph in disseminating Woodrow Wilson's Fourteen Points speech which helped 'spark' the Egyptian upheavals of 1919 – Anderson, 2011: 2),[5] as well as earlier forms of political protest and pre-digital social networking. For example, El Hamamsy (2011: 456) notes how, prior to the events of 2011, there had been an 'unprecedented number of demonstrations, and especially sit-ins and strikes, by unemployed youth, political dissidents and trade-union activists' that date back to at least 2003. Looking further back, the Egyptian Nobel Laureate and writer Naguib Mahfouz (1990), in his novel *Palace Walk* (the first of his 'Cairo Trilogy'), gives a detailed account of the role played by school and café networks in mobilising resistance to the British in the lead up to the 1919 Revolution (see also, Al-Hakim, 1990).

Beyond bland pronouncements hailing a 'Twitter Revolution', closer scrutiny of new media in Egypt (and elsewhere) reveals a particularly rich and complicated picture. In Egypt, as I will sketch below, government policy, activist networks, tech companies, and telecommunications companies all played key roles in shaping how social media use unfolded during the uprisings.

In a wide-ranging study of the changing Egyptian media landscape, Khamis (2011: 1161; 2008) notes how it was the government of President Hosni Mubarak in fact which initiated key media reforms, including the introduction of satellite television channels, and increased Internet access from 1993. Both these measures contributed in part to his undoing. In the former case, it was Al Jazeera's coverage of events that contributed in key ways to the government's credibility crisis (Khamis, 2011: 1165). In the latter case, Internet access provided activists with a space for communication and debate – including with other activists in the region (Kirkpatrick and Sanger, 2011) – and became, in Khamis' words, a 'stronghold of minority ideologies in the Middle East, including liberal currents' (Hatina, 2011: 8). In short, it 'ratified the right to dissent and questioned the Arab status quo' (9).

Regarding the Egyptian government's response to social media, Khamis (2011: 1162) argues that activist use of these media was tolerated initially because of the view that Internet communication might serve as a pressure valve of sorts, providing dissenters with a forum in which to vent frustrations without resorting to public protest. That they then moved to shut down Internet access has been viewed as an acknowledgment that it posed a threat (El Hamamsy, 2011: 455).[6] For El Hamamsy and Khamis, this proved a decisive moment (or, in

Mannheim's terms, the point at which it was recognised that reality might be transcended): deprived of key means of communication, Egyptians took to the streets to protest. The subsequent resumption of blocked Internet and telephony services revealed the scale of regime violence that had been masked by the lack of coverage. For Vila (2012), what this reveals is that possessing an 'Internet kill switch' does not 'prevent information from getting uploaded' (via YouTube and channels such as Al Jazeera and Al Arabiya), it 'can only delay it'.

Also of interest here are El Hamamsy's observations on the attempted interventions of technology companies and the involvement of telecommunications companies in the unrest. For instance, with respect to tech companies, at the height of the Internet block, Google announced a well-intentioned but ineffective service, called speak2tweet, which would convert voice messages to tweets for those with international land-line access, of which there were few (El Hamamsy, 2011: 460). And, with respect to telcos, much controversy was generated by the seemingly partisan involvement of telecommunications companies in supporting the Egyptian government during the uprisings. For example, Vodafone sent a series of pro-Mubarak text messages between 28 January and 2 February, 2011; a further rather more ambiguous message was sent on the night of 2 February calling on their subscribers to not 'listen to rumours' and to 'keep Egypt's safety in sight' (quoted in El Hamamsy, 2011: 462). The following day, Vodafone issued a statement declaring it was 'forced' to send the messages, a move which, in El Hamamsy's view, due its late timing and other factors, 'did not quite absolve Vodafone and other telecommunications companies in the eyes of the people' (462).

From this examination of the role of media technologies in the Egyptian uprising, three key themes or issues emerge. First, the 'Twitter Revolution' moniker elides the political and media complexities involved in the Egyptian uprising (and broader Arab Spring conflicts). Writing for *Foreign Affairs*, Zuckerman suggests that 'any attempt to credit a massive political shift to a single factor – technological, economic, or otherwise – is simply untrue' (for similar sentiments, see Ingram, 2011). Rather, events in Egypt, as elsewhere, are more likely the result of a 'bubbling cauldron' (Zuckerman, 2011) of ingredients, a highly complicated 'interplay between the online and the offline' (Christensen, 2011: 652), a 'moving complex of interpenetrating communication flows and their political efficacy across the different uprisings' (Cottle, 2011: 652).

Second, the Egyptian case (as with the Arab Spring as a whole) should be understood as a political and communications struggle between government and activists (Khamis, 2011: 1165 – my emphasis). Critics such as Malcolm Gladwell (2011) and Evgeny Morozov (2011a, 2011b) are very sceptical about the lasting impact of networked social media both during

and after large-scale political protest. Others take a quite different view. Shirky (2011), for example, argues that, 'as the communications landscape gets denser, more complex, and more participatory, the networked population is gaining greater access to information, more opportunities to engage in public speech, and an enhanced ability to undertake collective action'. 'These increased freedoms,' he argues, 'can help loosely coordinated publics demand change'. This, for Ingram (2011), can be 'a very powerful thing'. Both sides, I would suggest, risk capture within Mannheim's paradox insofar as debate of technology, ideology and utopia gets 'caught up in' ideology (Ricoeur, 1986: 159-160).[7] El Hamamsy (2011: 463) negotiates around some of these issues by arguing that we must regard these technologies as simultaneously tools of control and manipulation and as offering 'mode[s] of resistance'. That is to say, in the Egyptian dispute (and elsewhere in the region) media technologies were mobilised simultaneously in support for the will for stasis (ideology) and the will for change (the utopian urge).[8]

Third, it is by no means certain that Egypt (or any of the other key countries associated with the Arab Spring) has in fact had a 'successful revolution' (Khamis, 2011: 1169 – my emphasis); at very least, 'success' is a highly contingent concept. As one commentator, writing for *The Washington Quarterly* in late 2011, declares, 'Egypt's revolution is decidedly not over' (Masoud, 2011: 117). According to Masoud, 'the pluralism (and attendant lack of leadership) of Egypt's revolt has been hailed as its great strength', but also constitutes its greatest obstacle (117-118). Dividing those who earlier combined to oust Mubarak, he argues, is a growing schism that is formed around a 'fundamental disagreement over what democracy is, what it should produce, and what its limits should be' (118). Just as there are significant differences between each national conflict, so each country faces 'vastly different challenges moving forward' (Anderson, 2011: 3; see also, Wright, 2011; Olivier, 2012; Roy, 2012), with the prospects of some looking brighter than for others.[9]

Ideology, Utopia, and the Arab Spring

Having provided this extended discussion of the Arab Spring, I wish to now consider how these events and the use of technologies associated with them might be understood from the perspective of the earlier examination of ideology and utopia.

From the commentary on and reportage of unrest in Tunisia, Egypt and Libya, there appears, from an initial reading at least, to be a close, almost direct, correlation between them and Mannheim's theories on ideology and utopia. These events are striking in the present context as they would appear to follow Mannheim's specific formulation, described earlier, of 'reality-

transcending' ideas or 'wish-images' for social and political and economic change that were taken up by certain (oppressed or subordinate) societal groups and then 'embodied [...] into their actual conduct' and subsequently concretising (at least in the Tunisian and Egyptian cases according to some commentators) to become, in Mannheim's (1966: 174) terms, 'utopian'.

This same theoretical pairing of ideology and utopia is also discernible in political commentary on events in Egypt and elsewhere in the region. It has been suggested that one reason Western political commentators have been so fascinated by the Arab Spring uprisings as a whole is that these events responded to the hitherto unanswered 'vexed question of the shape of possible democratic alternatives to durable Arab authoritarianism' (El-Affendi, 2011: 1255; see also, Agathangelou and Soguk, 2011: 551).

Significantly, though, these similarities also extend to the same issues identified as problematic in Mannheim's theorisation of ideology and utopia. Take, for instance, the difficulty which Levitas (1990) notes of identifying whether an 'idea' is utopian and whether it has affected change. Even with the benefit of hindsight, Levitas argues, this is difficult to do, and is a task made even more difficult in light of the manifold forces fuelling the uprisings discussed above. The intermingling of ideological and utopian elements makes the kind of determinations that Mannheim appears to be calling for extremely difficult – as can be illustrated in the description of new media use by activists in the Middle East as enabling both the will for change, a space for the promulgation of 'liberal ideological thinking' (Hatina, 2011: 8), and government control and surveillance. It is in this context that Bloch's alternative conception of ideology and utopia as 'growing out of the same soil' and 'interpenetrating in the conceptions of the age' (Geoghegan, 2004: 130) is instructive because it acknowledges the messiness of the ideology-utopia pairing – an intermingling that was especially evident in the above analysis of the Arab Spring.

Ricoeur's re-theorisation of the ideology-utopia pairing presents some productive possibilities when applied to the events of the Arab Spring. For instance, his emphasis on ideology's initial 'integrative function' (prior to any later 'distortion') is helpful in explaining (to return to the earlier example discussed in the previous paragraph) how Middle Eastern activists can be described as unified by 'liberal' or 'minority ideologies' (Hatina, 2011: 8). Also instructive here is his formulation of utopia as the 'glance from nowhere' that seeks to convince others that 'imagination and not violence must make the break with the past' (Ricoeur, 1986: 287), and of utopia as that which 'replace[s] power with something else' (288).

What continues to dog the theories of Mannheim and Ricoeur (specifically his idea of a 'criterion of appropriateness'), however, and also forms something of recurrent theme running throughout the commentary on the Arab Spring, is the vexed issue of 'realisability'. The extent to which the social uprisings discussed above were so heavily shaped by manifold competing forces, and the complicated and at times contradictory engagements with media technologies during these conflicts, suggests the need for a revised understanding of utopia that responds to (if not fully resolves) this issue.

Utopia Within Ideology –Three Aspects of the Enduring Importance of Utopia and Ideology in Examinations of New Media

The above examination of events in Egypt and elsewhere in the region reveals two things. On the one hand, events in Egypt (as well as in Tunisia and Libya) bore a seemingly close resemblance to Mannheim's precise formulation of the relationship between utopia and ideology. On the other hand, the complexities of these distinct national conflicts, and the complicated involvement of media in them, reemphasises many of the existing critiques of Mannheim's theories, and further illustrates just how problematic the issue of utopian 'realisability' is. This particular issue, in effect, forms the Achilles' heel of numerous attempts to theorise utopia, including those profiled here.

Despite this vexed issue of realisability, a key contention of this article is that these twin ideas still hold significant potency, and productive theoretical possibilities can continue to be found by engaging with them in critical examinations of new media technologies and their respective cultures of use. For a number of critics (Ricoeur, 1986; Mullins, 1979), the historical tendency to oppose utopia to ideology (as distortion) remains problematic. A more productive orientation, as I see it, one that we can see beginning to be worked out by Ricoeur and developed more fully by the likes of Levitas (1990), is to think of utopia not as oppositional to but as always existing *within* ideology. Thus, rather than conceive of utopia as necessarily about the realisation of change, Levitas perceives the more effective role of utopia to be, first and foremost, as a form of social criticism or social critique (Levitas 1990: 196). Framed in this way, the concept of utopia is at its most powerful, productive, and provocative (in the sense of provoking the possibilities of or opportunities for change), and can be more usefully applied to the events of the Arab Spring. This is especially the case when this critique is motivated by three interconnected elements, which are sketched below.

The first involves a concern for the power that is invested in and yielded by institutions and institutional structures (whether these be corporations, media public policy, or otherwise).

This concern lies at the heart of the view that 'deinstitutionalization is the kernel of all utopias' (Ricoeur 1986: 299). To conceive of utopia in this way – as a critique of institutional structure and power – dovetails with similar concerns pursued within cultural theory (Gibson, 2007), especially the influential and pioneering work of Michel Foucault (2011, 2009, 2008), and the long and established tradition of political economic (Albarran, 2010; Freedman, 2008; Wasko, 2004; Mansell, 2004; Mosco, 1996; Golding and Murdock, 1991) and cultural economic (Bennett, et al., 2008; Du Gay and Pryke, 2002; Goggin, 2011) approaches to the study of media and communications. Here it is valuable to recall Ricoeur's (1986: 288) argument that ideologies *and* utopias both deal with power: the former is an attempt to sustain or legitimate it, while the latter is an attempt to replace it with something else. As we have seen in the Egyptian case, use of, and attempts to exert control over, media and communications technologies are central to these struggles.

The second application of utopia as social critique involves a concern for anamnesis. This might be described as an engagement with 'the idea that we have forgotten something, and consequently our problem is not so much to invent as to rediscover what we have forgotten' (Ricoeur 1986: 307). In other words, in this instance, cultural critique is motivated by a desire to excavate, recollect, and rediscover a 'hidden' or forgotten past in order to grasp 'the emergence of meaning and of the future in the present' (Touraine, 2000: 29). As a critical approach, it has already proven particularly productive in studies of media technologies, both old and new (Milne, 2010; Gitelman, 2008; Chun and Keenan, 2006; Gitelman and Pingree, 2003; Tofts, Jonson and Cavallaro, 2002; Bolter and Grusin, 1999; Tofts and McKeich, 1998; Marvin, 1988). The critical effectiveness of recollection and rediscovery as an orientation lies in its ability to temper the enthusiasm that feeds techno-boosterism and to recast the past in order to grasp the present. In the present context, looking back to both pre-digital forms of social networking and, especially, the longer history of technology use in social unrest in Egypt – from the role of the telegraph in sparking the 1919 upheavals (Anderson, 2011: 2), to the importance of typewriters and carbon copiers for those opposed to Anwar El Sadat's regime (Fandy, 2000) – is valuable in assessing the impacts of new media technologies, such as Twitter and Facebook, in facilitating or influencing the Egyptian (and wider 'Arab Spring') uprisings. Anamnesis can also be helpful in serving as a reminder of how, for example, media and communications technologies have historically served as key political tools of 'modernization' in Egypt (Abu-Lughod, 2005), albeit in 'highly ambivalent' ways, such that 'the margin of freedom allowed for the media [in Egypt] has been constantly widening and shrinking, as it oscillates between the poles of freedom and government repression' (Khamis, 2008: 264). Not only is such historical recollection valuable in emphasising that social unrest (the utopian urge) is always the result of a confluence of factors, [10] it also suggests that utopia (as social critique) can be 'reborn at the very core of a critique of technology' (Schaer, 2000: 6), rather than the other way round (as appears to have been the case in some of the more extreme techno-boosterist accounts of a 'Twitter revolution').

The third involves recognition of the potency that is made possible through commitment to the transformative potential of invention and inventiveness. This is discernible in a range of philosophical deliberations on culture and technology. For instance, for Jean-François Lyotard, 'Computers could [...] provide the information necessary for individuals and groups to decide on the best tactics for "imaginative invention"' (Murphie and Potts, 2003: 209). As Murphie and Potts remark, in holding to this belief,

Lyotard looks to a creative future rather than a mourning of the past. He calls to us to use technology not to become more utilitarian or profitable, but rather to become more sophisticated, imaginative and inventive in the way we live (Murphie and Potts, 2003: 209).

A commitment to inventiveness is also evident in Jean-Luc Nancy's writing. In his *The Creation of the World or Globalization*, for example, Nancy (2007) builds on a very careful critique which differentiates between 'globalization' and 'mondialization' (and which privileges the latter), to argue for the undecidability of beginnings. As Nancy's translators explain, 'the resource of the undecidability and groundlessness of beginnings is that another beginning, that is to say, other beginnings, would be possible' (Raffoul and Pettigrew, 2007: 13). In the present context, such considerations, once again, must be understood from the perspective that utopia always exists *within* ideology (Levitas) and that both are concerned with power (Ricoeur). How both are interpreted depends on one's position and perspective. Thus, earlier technologies, such as television (as noted earlier), promised for the Egyptian government an ideologically inflected 'another beginning' – one framed around modernization discourses. Meanwhile, fascination with the revolutionary promise of more recent technologies is, especially for critics such as Shirky, connected to a rather more utopian sense of 'another beginning' – one involving collective action and the potential for social change. This is precisely why the stakes are so high, for, in the political arena, the tensions between ideology and utopia more often than not involve a political and communications struggle between government and activists, which in turn has at its heart a struggle over the 'undecidability of beginnings'.

As the above three 'motivations' or 'orientations' seek to demonstrate, utopia is at its most convincing not when rendered as an alternative yet imaginary realm or reality, nor when viewed as something that must be 'realised' in order to be understood as properly utopian (Mannheim), but, rather, when rendered in the more straightforward yet potentially potent sense of social critique (or what Levitas calls the desire for a better way of being). It is in the latter sense that utopia is advocated here: as a potentially powerful tool or mechanism for critiquing societal structures and the technologies and technological discourses that shape them.

Conclusion

This article has examined the complicated historical relationship that exists between ideology and utopia in European thought (Mannheim and Ricoeur), and what this relationship can teach us about the role of media technologies in the significant upheavals experienced in Egypt (and elsewhere in North Africa and the Middle East) during the 'Arab Spring'. This analysis has revealed strong parallels between Mannheim's formulation of the ideology/utopia relationship and events in Egypt. It has also highlighted the merit of Ricoeur's conception of utopia as a 'glance from nowhere', as a productive 'imagining of something else' (1986: 266). A key issue, however, with the theories of Mannheim and Ricoeur, is the issue of realisability: that is, how, and indeed whether it is possible, to determine satisfactorily whether the 'utopian urge' has been fulfilled. Examining events in Egypt, and the ambiguous role of media technologies within them, only serves to highlight the difficulties in making any clear determinations about utopian realisability.

Nonetheless, and despite the vexed issue of realisability, in the second part of this article I argued that ideology and utopia continue to hold considerable contemporary significance, and can be productively recast – following Levitas – when utopia is understood as existing *within and emerging from* ideology, rather than when set in strict opposition to each other (as per Mannheim). This alternative understanding (where the one emerges from the other), and the key role played by media technologies, was extended around three interconnected themes or foci: the crucial role of power in both ideology *and* utopia; the importance of historical memory and recollection to analyses of both; and how utopia (and ideological resistance to it) pivots on the undecidability of beginnings.

Finally, it is understood that this revised approach to the ideology/utopia relationship by no means fully escapes from or resolves Mannheim's paradox. Nevertheless, the emphasis it gives to contextual and historical specificity does respond to, and works to resist, the universalising tendencies that were at the heart of Geertz's critique of the paradox that he saw structuring Mannheim's conceptualisation of ideology and his larger sociological project.

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Notes

[1] Indeed, it is this particular characterisation that has attracted the most strident criticism, such as the common complaint that utopias thus conceived are safe and non-threatening, a space where 'everything is compatible with everything else', where 'there is no conflict between goals', and where there is a 'dissolution of obstacles' (Ricoeur 1986: 296) – in a word, utopia as 'perfectionism' (Donskis 1997: 148, & cf. 150 & 152). Utopia understood in this way is considered '*u-chronic*, meaning it eliminates human activity and innovation as well as conflict' (Touraine 2000: 20). This is the vision of utopia that the writer Georges Perec condemns as 'depressing' because, collectively, such spaces 'leave no room for chance, for difference, for the miscellaneous' (Perec, 1999: 191).

[2] It is the former of these two understandings of ideology that is sometimes conflated with utopia, so that utopia is conceived of as a form of concealed 'social engineering' (for a full discussion of this line of argument, see Donskis 1997: 128ff). An even more extreme extension of this view is the further conflation of utopia with totalitarianism. On this topic, see Donskis (1997: 130ff) and, for a historical overview, Rouvillois (2000).

[3] One difficulty in contrasting ideology and its relationship to utopia is specifically Marxist, insofar as, in Marxist thought, as Ricoeur (1986: 271) argues, 'the distinction between utopia and ideology tends to disappear'. It can, in fact, be understood as a double 'disappearance': first, Marxist thought 'opposes ideology to praxis, and what is opposed to praxis is fancy or the imagination' (271); a second criterion of ideology (especially in the work of Engels and Althusser), he notes, is to oppose it to science, with the result that the 'unscientific covers both ideology and utopia' (271).

[4] It is an apparent impasse that it is possible to negotiate, however. For instance, Ruth Levitas (1990) posits a simple distinction between hope (for that which can be realised) and *desire* (for a better way of being), with utopia constituting the second of the two positions (190-192). In Levitas's view, it is *politics* that transforms the second into the first: a desire for a better way of being (the utopian urge) transmuted into a realisable future. What is useful about this configuration is that utopia can be an unrealisable *desire* and still have an impact.

[5] As one commentator puts it, 'the media of the day has always been transcendent in revolutions' (Hirschberg quoted in Moore, et al., 2011: 4).

[6] Interestingly, Ghannam (2011: 16) reports that in Tunisia, 'authorities blocked Twitter in its four weeks of protest [...], yet proxies are regularly used in Tunisia, and Ben Ali did not shut down the Internet'.

[7] The Gladwell-Morozov / Shirkey debates over the role of social media in these uprisings also get caught up in issues concerning the enduring difficulty of correlating cause and effect. If media effects research has taught us one thing, it is that this is notoriously difficult to determine.

[8] In a widely circulated blog post, Ulises Meijas (2011) suggests a key problem with the 'Twitter revolution' label is that 'depoliticizes our understanding of the conflicts' and that it 'whitewashes the role of capitalism in suppressing democracy'. Meijas develops this latter point in two directions. The first, which carries echoes of the sorts of arguments that used to be made in the early days of the Internet by the likes of the Electronic Frontier Foundation, is via the argument that 'the emerging market structure of the internet is threatening [the Internet's] potential to be used by people as a tool for democracy' (Meijas, 2011). The second takes the line that, 'as digital networks grow and become more centralized and privatized, they increase opportunities for participation, but they also increase inequality, and make it easier for authorities to control them' (2011). For Meijas, then, the ultimate struggle will not be one over who *utilises* networked social media. Rather, it will be one pitted '*against* those who own and control the network'.

[9] Similarly, in the case of Tunisia, one online comment, posted soon after the ousting of the then Tunisian President, Zine el-Abidine Ben Ali, observes: 'I don't think we can speak of the "Tunisian Revolution" as a revolution that "brought down the government" because much of the old govt and the military are still in power and the "revolution" is not even over yet' (AnonAnon, 2011).

[10] As Hofheinz (2005: 96) writes, 'The Internet is one factor that in tandem with others (satellite TV, youth culture, and the "globalization" of consumer products, social networks, and ideational configurations) is creating a dynamic of change that is helping to erode the legitimacy of traditional authority structures in family, society, culture/religion, and also the state, and thus creating pressure for reform.'

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FCJ-147 Liberation Technology and the Arab Spring: From Utopia to Atopia and Beyond

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After some initial fascination with the concept, there now appears to be more skepticism than support for the idea that tools like Twitter and Facebook are single-handedly responsible for igniting the Arab Spring movements. As we witness the immense effort and human cost that has gone into uprisings in Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Saudi Arabia, Sudan, Syria, Tunisia, Western Sahara and Yemen, we recognise that it takes much more than a social media platform to organise and sustain a grassroots protest movement. And yet, the neoliberal discourse behind the trope of a “Twitter Revolution” (a revolution enabled by “liberation technologies” which empower oppressed groups) continues to function—especially in Western media and academia—as a utopian discourse that conceals the role of communicative capitalism in undermining democracy. The meme of the Twitter Revolution may have come and gone, but the ideology that gave rise to it continues to colour our ideas about participation and democracy.

What follows are some observations about the manner in which discourses around liberation technology are used to imagine a utopian model of activism in which digitally networked communities are capable of changing their political realities through mediated participation facilitated by corporations. Specifically, I want to do three things: 1) to examine how the utopian discourse of liberation technology circumvents any discussion of the market structure of digital information and communication technologies; 2) to explore how this utopian discourse normalises the role of digital networks as platforms that increase participation while simultaneously increasing inequality, and 3) to propose responses to the utopian discourse of liberation technology that provide alternative imaginings of social participation. I should clarify that my objective is not to provide a detailed account of the unfolding of the Arab Spring movements or their continuing repercussions; rather, my goal is to describe how the assumptions behind the *rhetoric* of liberation technology correlate to the *practice* of civic disobedience, and to delineate a theoretical framework for understanding the contrast between

the two. Hence, I do not believe my argument is limited to a North African or Middle Eastern context. Events since the Arab Spring such as the England riots in August of 2011, or the emergence of the Occupy movement in September (which happened after this text was originally submitted for publication, and are therefore not discussed in detail) serve to extend the validity and application of my argument.

It would be adequate to begin by expanding the constrictive parameters set forth by the concept of *utopia*. Here, I will take a page from McKenzie Wark (2007) and augment this idea with the concepts of *heterotopia* and *atopia*. While a *utopia* is a nowhere that exists in a theoretical realm, a *heterotopia* is an actual but different space, an elsewhere where exceptional conditions from those that usually apply exist. Thus, while a *utopia* can only exist in the imagination, a *heterotopia* is an “island” (such as a school, a prison, a stadium or a hospital) where people are allowed—or forced—to follow different social rules. Lastly, an *atopia* is similarly an alternative site with different social norms, except that in this case, the site can be located anywhere or everywhere; it is borderless. In the remainder of this paper, I will be sometimes alluding to how the discourses of digital networks, participatory media, and mobilisation inscribe social participation in the different topological planes of *utopia*, *heterotopia* and *atopia*. Although these concepts are not central to my argument per se, they will help me frame a critique of liberation technology.

There is, indeed, much utopianism around the discourse of social media and recent protest movements. Even before the so-called Twitter Revolution, we can point to a growing trend, particularly within mainstream and even alternative journalism, that suggested that protest movements all over the world were transformed by participatory media (examples include statements about the revolutionary impact of cell phones in the Philippines, YouTube in Iran, Facebook in Moldova, and so on). I am choosing to collect this particular brand of technoutopianism under the rubric of “liberation technology,” not because this is a term that is readily recognisable in popular or academic discourses, but because of its rich semiotic meaning. One noticeable place where a definition of liberation technology is attempted is the Web site for the Program on Liberation Technology at Stanford University. There, we are informed that the goal of the program is to research ‘how information technology can be used to defend human rights, improve governance, empower the poor, promote economic development, and pursue a variety of other social goods’ (‘Program on Liberation Technology’).

These are worthy goals. But my first encounter with the term “liberation technology” made me think of a similarly sounding concept, and even now, typing those words in Wikipedia will cause the search algorithm to ask: ‘Did you mean liberation *theology*?’ At first glance, perhaps both movements share a certain ethos and idealism. But my critique of liberation

technology centers on the fact that, whereas liberation *theology* sought to lend legitimacy to the struggle of the oppressed by questioning the hierarchical structure of the Catholic church from within, and suggesting that the church itself could be the source of injustice, liberation *technology* does not seem very interested in questioning the roles and structures of the institutions that own and control social media networks. Instead, liberation technology seems to posit a worldview whereby technologies that emerge in the context of capitalism (precisely at places like Stanford) can be used by those wishing to challenge capitalism itself.

As the history of global unrest intersects with the emerging affordances of information and communication technologies (ICT), no one can deny that these can—often in unforeseen ways—aid in the defence of human rights, improve governance, empower the poor, and so on. But that is not the point. The point is that while presenting these technologies as nothing less than the agents of liberation, a critique of the capitalist institutions and superstructures in which these technologies operate is obscured, and this critique is necessary for understanding the relationship between capitalism and ICT, as well as for opening up new frontiers of liberation.

It has already been convincingly argued that neoliberalism would not have been possible without ICT (cf. Robert Neubauer, 2011), to the extent that these technologies facilitated transnational flexible production and unrestricted capital flows, causing the erosion of organised labour and the promotion of an unregulated, privatised “free” market as the solution to all of society’s ills. But here I am more interested in the link between capitalism and communication as an act of participation in society. Jodi Dean’s concept of communicative capitalism is particularly relevant, since she defines it as ‘the materialisation of ideas of inclusion and participation in information, entertainment, and communication technologies in ways that capture resistance and intensify global capitalism’ (2009: 2). In communicative capitalism, everyone has the tools and opportunities to express an opinion. “Participation” in society is therefore identified first and foremost as the ability to communicate, to express one’s opinion, in particular about the—mostly commercial—choices that give individuals their identity. However, the overabundance of communication in a marketplace in which all statements compete for visibility results in an environment where political change becomes difficult (if all options are equally valid, how can one option be declared superior?). Thus, the more we communicate (through our participation in digital networks, for instance), the more resistance is obstructed, and the more the ideology of capitalism is reinforced. Communicative capitalism—to paraphrase Gilles Deleuze—doesn’t stop people from expressing themselves, but forces them to express themselves continuously (1997: 129).

Encouraging compulsive and continuous expression has turned out to be a profitable business model, as evidenced by the growth of the social media industry. Facebook, launched only in 2004, was adding on average 250,000 new members a day by 2007. Currently, it has over 845 million members ('Facebook Company Info'), who store 'more than 100 petabytes (100 quadrillion bytes) of photos and videos' in the company's servers ('Facebook Infrastructure'). According to industry reports, the social networking market as a whole grew 87% from February 2006 to February 2007 (Britton and McGonegal, 2007: 80). Currently, the world spends over 110 billion minutes a month on social networks and blog sites, which equates to 22% of all time spent online (Nielsen Wire, 2010). Social media is driven by advertisements targeted to users based on the demographic data they provide, and the amount spent on advertising in social network services was \$1.4 billion in 2008, with companies spending \$305 and \$850 million dollars to advertise their products on Facebook and MySpace, respectively (Eskelsen, Marcus and Ferree, 2009: 102-103). While the launch of new social media companies gives the impression of a competitive market, merger and acquisition trends suggest a move towards conglomeration that mirrors that of (and intersects with) traditional broadcast media. In a notable example, MySpace (which currently has over 185 million members) was acquired for US\$580 million in 2005 by Rupert Murdoch's News Corporation, one of the eight companies that dominate the global media market (although it was later sold again, once it lost its market share to Facebook).

In essence, communicative capitalism means that communication and social exchange take place not just in any environment, but in a privatised one. The neoliberal impulse to subsume all social communication and participation to market forces can only be achieved if the network is made the dominant episteme or model for organising social realities. This is accomplished by the application of what I call a nodocentric filter to social formations, which renders all human interaction in terms of network dynamics (not just any network, but a *digital* network with a profit-driven infrastructure). Under a nodocentric view, the goal is to assign to everything its place in the network. Nodocentrism is an epistemic stance where the distance between a node and something outside the network is, for all practical purposes, infinite (Mejias, 2010). Thus, to be anything other than a node is to be invisible, non-existent. The technologies of communicative capitalism are applied towards the creation of a pervasive or ubiquitous computing environment in which every thing and every utterance must be integrated or assimilated as a node in a digital network.

As a way to illustrate the concept of nodocentrism in broader terms, consider the example of search engine results, and how they point to documents, sites or objects that have been indexed in a database. What has not been indexed is not listed as a result, and it might as well not even exist in the universe of knowable things as far as the search engine is concerned. Nodocentrism is also at work in the creation of friend lists like the ones used

in social networking programs. These lists are nodocentric because they depict a social network comprised of individuals available (or potentially available) to interact with, but they render invisible the individuals who are not on the list because they do not use the same program, or because they do not have an account with that service. The algorithms of digital networks operationalise decisions about what is included or not included on the list. I am not suggesting that nodocentrism provides a deficient or false image of the world; I am simply pointing out how it embodies a politics of network inclusion and exclusion.

Consider the example of social movements like the Arab Spring. The discourse of liberation technology presents these movements as the work of “wired” activists, although this portrayal excludes the work and participation of activists who are not computer literate, or simply not social media users. Social change is thus imagined as an outcome of information flows within a network, and activists are portrayed as nodes transmitting dissent to other nodes. In order for liberation to happen, everyone must be connected to the same digital networks. Change and resistance are conceived in nodocentric terms.

But privileging a networked view of activism in this way can also serve to obstruct any real critique of social media technologies, and to justify their use without the need to question their terms of use. The discourse of liberation technology accomplishes this by providing two different—although interdependent—versions of the affordances of these technologies: one for the homeland territory, and one for abroad. While communicative capitalism provides citizens at home no real opportunities for resistance (the majority are too occupied compulsively communicating), liberation technology presents a liberal and utopian narrative of the emancipating and empowering potential of technology in places not entirely corrupted by capitalism. In other words, change, while impossible “here,” is realised through liberation technology “over there,” in a heterotopian elsewhere (that in the case of the Arab Spring includes the Middle East and parts of Africa). This is a valuable manoeuvre for liberal sensitivities, because it redeems the technologies of communicative capitalism. Activists “over there” are using these tools not just to talk about commercial choices, but about things that *really matter*: the overthrow of injustice, the plight of the poor, etc. Liberation technology thus functions as a form of self-focused empathy in which an Other is imagined who is nothing more than a projection that validates our own desires, a user of the same technologies we are using—a user who applies these tools not for the frivolous ends of consumerism, but for the betterment of the world.

This would seem to imply that the discourse of liberation technology can only serve to arrest social change at home. If that were strictly the case, it would be difficult to account for the Wisconsin protests in early 2011, the emergence of the Occupy movements, or for

that matter, any subsequent act of protest in the West that uses technology to mobilise people. The fact that these events continue to germinate and spread seems to demonstrate that it is only a matter of time before social movements influence each other in this age of global media, thus making it possible for liberation technologies to fulfil their true potential wherever the social and economic conditions that fuel social unrest are present, even at home.

What is interesting, however, is that coverage of post Arab Spring movements in the West has not really revolved around protesters' use of social media, or it has only minimally. Participatory media being used at home for organising protests is apparently not that newsworthy, since it lacks the sensationalist and media-friendly orientalism of the Twitter Revolution stories. And as the use of participatory media in social movements has become normalised and generalised, there seems to be continued support for the belief that these corporate products have fundamentally shifted the balance of power between producers and consumers, and therefore between the owners of the means of production and the audience.

However, I would propose that the discourse of liberation technology conceals, in fact, how production on the new platform continues to exhibit a power imbalance. In theory, the internet (the über liberation technology in the liberal worldview) brought about the end of communication monopolies with their one-to-many models of dissemination; now, in the age of user-generated content, we have communication that is many-to-many. Access to the tools of production and the channels of distribution has been greatly democratised—the theory goes—and monopolies have been replaced by a free market with perfect competition. Everyone has the opportunity to create content, and everyone has the opportunity to engage that content. While the equation of this continuous communication cycle with civic participation is precisely what the concept of communicative capitalism seeks to critique, we need to also question the utopian narrative that describes a seamless evolution from monopolies (one-to-many) to more democratised circuits of communication (many-to-many). Has the empowering of more voices fundamentally altered the market structure of participation?

To answer that question, we need perhaps to take a brief detour through the Hitler Finds Out meme. This phenomenon refers to a series of parody videos on YouTube that began to appear circa 2006 in reaction to a sequence from the German film *Downfall* (2004), which depicts the last days of Hitler towards the end of World War II. Users took a three minute clip from the film in which Hitler learns he is losing the war, and while leaving the original German soundtrack intact, provided new subtitles to make it appear as if the Führer is ranting about something else (like being kicked out of Xbox Live, the subprime mortgage crisis, the cancellation of the TV show *Ugly Betty*, and so on). But when the company that

produced the film began to receive complaints that the parodies were trivialising the war and the holocaust, they decided to pull the clips from YouTube, claiming that the videos constituted a violation of copyright. The creators of the parodies felt their Fair Use rights were violated, and responded by creating more videos. One of them, in which Hitler rants against the videos being removed from YouTube, contains an interesting moment. When a Nazi general suggests to Hitler that they simply upload the videos to another video hosting service, like DailyMotion or Vimeo, Hitler angrily responds that nobody uses those services, and that 'YouTube is the de facto standard' (Green, 2010).

The point of this anecdote is to highlight the fact that when people have a video they want seen by the largest audience, they will most likely use YouTube (even if it is a video critiquing YouTube). And when people want to join a social networking site, they will join Facebook. And when they want to participate in a micro-blogging community, they will choose Twitter. There are alternatives for each of these services in the marketplace, but the fact that these networks host the most users renders the competitors almost useless. Most individuals will not willingly opt to use a service with a lesser share of the market.

This brings us to an important realisation about the market structure of social media: one-to-many is not giving way to many-to-many without first going through many-to-one. In other words, in this age where everyone can be producer and not just a consumer, the communication monopoly has merely been replaced by the monopsony (in economic terms, a monopoly is a market structure characterised by the presence of a single seller, whereas a monopsony is characterised by the presence of a single buyer). We—the sellers—are legion, but the buyers of what we produce are few. What we sell is not a product assembled in a factory, but "content" generated through social interactions which we hand over to the only buyer in town, the Facebook's and Google's of the world.

That monopsony has become the dominant market structure of the Web is not accidental. The architectures of participation of social media are based on a model where profit margins are maximised the more users join the network (which is why access is free or extremely low cost), and the more demographic data those users provide so that advertising can be targeted at them. As the saying goes: if you are not paying for it, you are not the customer, you are the product being sold. Access to "free" social media services exist only because companies have figured out a way to monetize our participation.

My argument is that this exchange is not fair for a variety of reasons, and that while digital networks increase opportunities for participation, they simultaneously increase inequality. In other words, the technologies of communicative capitalism embody practices of social

participation and inclusion, but as Dean (2009) suggests, they also perpetuate the ideology of capitalism and obstruct any resistance to it. The way in which they do so—the way in which they create inequality while increasing participation—is through strategies that include the commodification of social labour (bringing activities we used to perform outside the market into the market), the privatisation of social spaces (eradicating public spaces and replacing them with “enhanced” private spaces), and the surveillance of dissenters (through new methods of warrantless wiretapping and social network analysis).

In order to provide a clear picture of the impact of this inequality, we must consider not only arguments that show the immediate benefits of a particular technology, but broader arguments that contrast the increase of access and participation with more comprehensive societal indicators. For instance, a Pew Internet & American Life Project survey from July of 2010 (Smith, 2010) indicated that cell phone ownership in the United States was higher among Latinos and African Americans (87%) than among Whites (80%). This would seem to suggest some progress in terms of inclusion, and perhaps even economic opportunity. However, when we contrast this data with the fact that the median wealth of African Americans has decreased 77% since 2007 (‘Harper’s Index,’ 2010), it becomes apparent that access to certain technologies does not, by itself, translate into more equality. It might be helpful to speak of the inequality generated thorough participation via digital networks in the manner that Andre Gunder Frank (1967) spoke of underdevelopment: not as the result of being excluded from the economic systems of capitalism, but precisely as the result of being included in them.

That digital networks increase participation while increasing inequality is also evident in the case of the Arab Spring. While we have seen a diminishing in the compulsion to brand these acts of protest as Twitter Revolutions (as if corporate products, not people, deserve the credit), the discourse of liberation technology nonetheless implies that social media is partly responsible for igniting the uprisings—and in cases like Egypt, for their success. That these tools can and should be used for getting more people to participate in democratic movements is not what I am arguing against. Rather, I am interested in the larger consequences and implications for democracy of employing such tools, and I am proposing (along with people like Evgeny Morozov, 2011) that the use of social media by activists increases opportunities for participation and action, but it also makes it easier for governments and corporations to operate a repressive panopticon.

According to a report by the OpenNet Initiative, around 20 million users in the Middle East and North Africa have already experienced the blocking of online political content carried out with the help of Western technologies (Norman and York, 2010). To the extent that grassroots movements all over the world continue to rely on corporate liberation

technologies to organise and mobilise, we can expect inequality (through participation) to take various forms.

First, there is the loss of privacy through surveillance. States can monitor activity within online social networks to identify dissenters and learn of (and obstruct) their plans. This is accomplished through deep-packet surveillance, filtering and blocking technologies, provided to repressive regimes like Iran, China, Burma and Egypt by companies like Cisco, Motorola, Boeing, Alcatel-Lucent, McAfee, Netsweeper, and Websense (York, 2011; Mayton, 2011). Recently, a group of Chinese citizens even filed a lawsuit against Cisco, claiming that the technology that allowed the government to setup the Great Firewall of China led to their arrest and torture (Abbott, 2011). That the US government pays lip service to the importance of a Free Internet (MacKinnon, 2011) and finances circumvention technologies (Glanz and Markoff, 2011) while supporting these companies through tax breaks and lax regulation is an unfortunate contradiction.

Second, inequality through participation can also be produced through the use of PSYOPs and propaganda. The US Army, for instance, is developing artificial intelligence agents that would populate social networking platforms and dispense pro-American propaganda (Fielding and Cobain, 2011). Dozens of these 'sock puppets' could be supervised by a single person, and their profiles and conduct would be indistinguishable from that of a real human being. A low-budget version of this strategy has already been put into action by the Syrian government, who apparently released an army of Twitter spambots to spread pro-regime opinions (York, 2011).

Loss of freedom of speech is another example of inequality through participation. Companies, unlike states, are not obliged to guarantee any human rights, and their Terms of Use give them carte blanche to curtail the speech of certain users. For instance, Facebook (one assumes under the direction of the British authorities) recently removed pages and accounts of various protesters belonging to the group UK Uncut just before the wedding of Prince William and Kate Middleton (Malik, 2011). UK Uncut is not a violent terrorist organisation, but a group that opposes cuts to public services and demands that companies like Vodafone pay their share of taxes.

Suspension of service is another issue to consider. States (in collaboration with corporations) can simply "switch off" internet and mobile phone services for whole regions, in order to terminate access to the resources activists have been relying on. Vodafone, for instance, complied with the Egyptian government's directive to end cell phone service during the Revolution of 25 January (Shenker, 2011).

Inequality though participation will also be evident in new technologies that will facilitate the remote control of mobile devices without the user's consent. Modern cell phones have, for some time, provided the authorities with the ability to use them as wiretapping devices without their owner's knowledge, even when the power is off (McCullagh and Broache, 2006). And they can also be used to track individuals and report their locations. An indication of what else we can expect in the future is a patent, filed by Apple, that allows for authorities to remotely disable a phone's camera (Mack, 2011). While this is intended to prevent illegal recording at concerts, museums, etc., we can imagine how effective it would be at protests.

The last example of inequality through participation I will briefly discuss is crowd-sourced identification. One reason why authorities may want, in fact, not to remotely disable phone cameras is because they can aid in the identification of activists. At the Vancouver riots of June 2011 (which had nothing to do with correcting social injustices, and everything to do with sports hooliganism), Facebook, Twitter and Tumblr users were enlisted in a crowd-sourcing attempt to identify miscreants using digital photos and videos posted by onlookers (Wong, 2011). Similar practices were employed by the Iranian government during the post-election riots of 2009. Websites like <http://gerdab.ir> were setup to allow regime sympathisers to identify protesters and report them to the authorities (Tehrani, 2009).

All of the practices described above confirm Morozov's observation that social media can be used by both sides, not just the side we agree with, and that the sacrifices in privacy may not be worth the gains (2009). Which perhaps explains why, at least in the Gulf Countries, Facebook usage seems to be diminishing (Khatri, 2011). But as regimes—repressive as well as democratic—learn how to use social media to influence the popularity of certain viewpoints, monitor communication, and detect threats, it seems as if dissent will become possible only in the excluded, non-surveilled spaces of what is outside the network, away from the participation templates of the monopsony. It is to this possibility that I want to turn next.

A typical drawing of a network depicts a series of nodes connected by lines, representing the links. As a mental exercise, I want to call attention to the space between the nodes. This space surrounding the nodes is not blank, and we can even give it a name: the paranodal. Because of nodocentrism we tend to see only the nodes in a network, but the space between nodes is not empty, it is inhabited by multitudes of paranodes that simply do not conform to the organising logic of the network, and cannot be seen through the algorithms of the network. The paranodal is not a utopia—it is not nowhere, but somewhere (beyond the nodes). It is not a heterotopia, since it is not outside the network but within it as well. The paranodal is an atopia, because it constitutes a difference that is everywhere.

Broken Web links pointing to pages that no longer exist, or cached versions of pages no longer active are paranodal, because they represent phantom nodes. Signal obstructers such as RFID (Radio-frequency identification) blockers that prevent network devices from being found are examples of technologies that create paranodality. Public spaces without surveillance cameras are paranodal spaces. Pirate radio operators are paranodal, because they function without network registration. Any kind of space where signal reception cannot be established is paranodal. Digital viruses and parasites that obstruct the operations of a network are also examples of paranodal technologies. Obsolete technology is paranodal, because its usage is no longer required to operate the network. Digital noise and glitches are paranodal, because they interfere with the flow of data in the network. Paranodality is a lost information packet in the internet. Populations in a dataset that are excluded or discriminated against by an algorithm become paranodal. Punk or rouge nodes—nodes who belong to a network only in order to destroy it—are paranodal. The activist who does not use liberation technologies is also an example of a paranode. This does not mean that paranodes are completely off the grid and outside all networks; for instance, someone not on Facebook might still be on email, which means she is a paranode in relation to the former but a participant in relation to the latter. Thus, the concept of the paranodal can help us describe network exclusions as well as allegiances.

The reason paranodes are important in our discussion of liberation technology, monopsonies, and protest movements is because these peripheries represent the only sites from which to disidentify from the network. The paranodal, to paraphrase Jacques Rancière, is the part of those who have no part (1999), and it is the means by which things that are not nodes can claim difference from the network as a whole, refusing to identify with it.

While the study of resistance movements as networks continues and will continue to be useful, a framework for opposing the nodocentric ordering of these movements into privatised templates for participation is necessary. As activists continue to demonstrate to liberation technologists, the struggle must go on after the internet and other digital networks are shut off—if the fight can't continue without Facebook and Twitter, then it is doomed. This means that the struggle is in part *against* those who own and control the privatised networks of participation (and can thus switch them off). Consequently, we have to turn to the paranodal for the emergence of corresponding models of activism. Since the peripheries represent the only sites from which to unthink the network, it is in the paranodal where new strategies will emerge: strategies of obstruction, interference, and disassembly of privatised networks; strategies of leaking information or circulating misinformation in networks; and strategies of intensification: transforming action that begins in one kind of network into resistance and engagement with alternative forms of networks.

As we realise that many-to-many communication is becoming impossible without a for-profit many-to-one infrastructure, we must abandon the utopian fantasy that liberation technology, as currently envisioned, can increase democratic participation. Participation managed by monopsony can only increase inequality. In response, paranodality must provide an atopian way to challenge the network by serving as a method for thinking and acting outside the monopsony. As networks have become not just metaphors for describing sociality, but templates that organise and shape social realities, we must question our investment in corporate technologies as the agents of liberation.

Biographical Note

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