Gentrification in the mesh? An ethnography of Open Wireless Network (OWN) in Deptford.

Abstract

The paper offers a critical perspective on practices of construction and consumption of wireless mesh networks in urban environments. It narrates Open Wireless Network (OWN) in Deptford, at the moment in which this inner borough of London undergoes an intense gentrification process.

Drawing on critical urban theory, the ethnography frames OWN as a socio-technical assemblage deeply entangled with everyday city life. It argues that gentrification poses challenges to grassroot wireless network like OWN, because it risks to reduce it to an individualised utility. This is because the process of neoliberal re-organisation of urban space displaces working-class disposition towards others, as well as their ethos for sharing—which are essential to the development of OWN. The initial findings suggest that the communitarian construction of this wireless network has so far helped to maintain a commitment to reciprocity, potentially offering—for its users and developers—pockets of resistance against their cultural displacement.

The research operates on a multidisciplinary level evoking, at the same time, production of urban space, hackers, and technology. It wants to stitch back together some literature on socio-technical assemblage and the 'right to the city'. The final part of the paper suggests a Lefebvrian oeuvre for the 'rights claims' of OWN users, as a space in which digital rights and material needs might come together in playful, engaging and innovative ways.

Introduction

While writing my PhD research on the gentrification of East Greenwich riverside (London 2012), I became involved in making my own photo/blog. A friend introduced me to a local weekly drop-in workshop on Linux-based solutions, 'Wireless Wednesday'. There I met a group of hackers and computer enthusiasts who introduced me to the Free and Open Source Software world, and the hands-on, learning-by-doing, approach to computer technology. I became part of Open Wireless Network (OWN)—a free, community-built, Wi-Fi network between Greenwich and Deptford—and for many years I hosted a node in my own flat.[1]

Being an urban scholar converted to computer technologies and hackerdom, I want to maintain a multidisciplinary approach to the study of wireless communication. I first draw on critical scholarship that puts gentrification—and the displacement of working-class residents it determines—as central to city change (Brenner, 2009; Harvey, 1978; Slater, 2006). I then use a critical reading of the Social Construction of Technology (SCOT), suggesting that the production of urban space is crucial to the development of such technologies—wireless networks are, after all, very local and territorial (Bijker, Hughes and Pinch, 1987; see especially Klein and Kleinman, 2002). In the final part, I suggest that the 'rights claims' that hackers and users of OWN make—by way of producing, circulating and using such a network—are part of a broader claim: the 'cry and demand' for a more equal city (Marcuse, 2009; see Isin and Ruppert, 2015).

Of course, the claim for a 'just city' appeals to *both* the development of the Internet *and* the surrounding urban space. As Graham effectively puts, 'information society is an increasingly urban society' (2004). Cyberspace is thus a social space ruled by the same trajectories and power relations we can observe elsewhere (Isin et al. 2015). Both cyberspace and city space are described by the way in which bodies move through them. They are traversed by daily local journeys (Knowles, 2010) and

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1   This is the 'box' that allows the wireless network to communicate between nodes. In a mesh network, all routers connect to each other using a special software. When a router fails, this software automatically calculates a new route to the destination (more details below).

electronic mobilities (Graham, 2005). Bodies generate broader rights demands because they belong to people that are, at the same time, city dwellers and receivers-producers of wireless communication. This study thus understands 'the problem' of wireless networking—privacy, communication, freedom—in conjunction with 'the problem' of city space—how it is produced, governed, and lived.

The paper suggests that gentrification poses challenges to grassroot wireless network like OWN because it risks to reduce it to an individualised utility. This is because the process of neoliberal re-organisation of urban space displaces working-class disposition towards others (Skeggs and Loveday, 2012)—their ethos for sharing which is essential to the development of OWN. My initial findings show that OWN has offered pockets of resistance against cultural displacement to its users and developers, mostly working-class residents of Deptford. At the same time, the provision of a grassroot wireless network follows unpredictable evolution trajectories which compel future research and analysis.

I first introduce the neighbourhood where the nodes that make OWN are located. I take a socio-historical perspective on its recent changes (see Back, 2015, p.833). This will help readers to contextualise the spatial implications of OWN with regards to this peculiar part of London. I then open to the literature on urban infrastructures and on wireless networks, with particular attention to the social 'context' in which technologies are made. This context, to my mind, includes the surrounding city: this is not always obvious. Recent literature on wireless networks either suggests a deterministic development of digital citizenship—mostly from a computer-centred perspective (see for instance Bar and Galperin, 2004; Foth, 2006); or integrates urban space and digital infrastructures without explaining how the former is produced—mostly from a media-centred perspective (for instance Antoniadis and Apostol, 2014; Foth, 2003; Foth, Klaebe, Adkins and Hearn, 2009).

Extracts from my fieldwork material occupy the central part of the paper. The fieldwork comprises years of participation to 'Wireless Wednesday' workshops—this is where discussions about, and practice of, technology (the various 'hacks') happen

alongside many other things; few recent semi-structured interviews with developers and users; and many clues deriving from elicitation around photographs, 'obsolete' technologies, stickers, logos, hand-drawn charts, and maps. Although interviews are in the small range, there have been myriad interactions noted on my research diary: these include comments and jokes—something that hackers are always keen to perform (Coleman, 2012). Moreover, there has been a general unwillingness from workshop goers to sit down and being recorded. Most interventions are therefore anonymised. As a narrative device, as well as data point in its own right, I present panoramic photographs from OWN archive. These were used for photo-elicitation, that is, for a discussion with the participants around the subjects and spatial relations in the photographs as they appear to them (Harper, 2002). Photo-elicitation gave me a chance to capture details on the social history of this peculiar digital network, made of technologies as well as of people and their daily urban experience. For instance, when I discuss with the author—James, founder of OWN—which photographs to include in this paper. These photographs stimulated my sociological imagination: they dictate the tempo and draw the storyline along which the ethnographic narrative unfolds.

The account partly wants to convey this experience of intimacy with 'hackers' and computer technology.[2] More importantly, it speaks from the social landscape and the urban experience through which both technology-makers and myself were dwelling: inner-city Deptford. It wants to connect the way in which the city is produced and lived with the way in which the wireless network develops. This is the theoretical and methodological framework through which I understand some of the lives and technologies I narrate here.

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2   Part of this ethnography appears in a forthcoming book chapter.

Icarus ascending

One very pleasurable aspect of open wireless networking is the regular opportunity to view these panoramas from high up on rooftops and highrises as we travel about installing equipment. (James, founder of OWN)

Illustration 1: Panorama from the Pepys Estate, Deptford. Looking South.

The photograph is a composition of few snapshots from a mobile phone. It is taken from the top of the tallest council block in London, Daubeny Tower—one of the three 24-store buildings finished in 1962. It is part of the large council-owned Pepys Estate in Deptford, South East London.

The panorama 'only' depicts the Southern part of Deptford, since the installers have their backs to the river Thames. Despite being at the sought-after river bank and opposite Canary Wharf, they look down towards residential Deptford. This is an inner borough of South East London with a history of working-class labour and sustained migration, both linked by various exchanges and controversies to the nearby Thames (Back and Lyon, 2012; Davidson and Lees, 2005; Steele, 1993). The installers' gaze immediately turns into a sort of network map: they discuss incoming obstacles to the transmission of wireless signal, buildings or trees. But they are also scanning the landscape for potential points of contact, somewhere down below, pointing to other visible nodes and known hosts of the network. This is my entry point in the study of OWN, a wireless mesh network in Deptford at the intersection of people, place and technology.[3]

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3   I describe the network in the next two sections. More technical details on Mesh Networking are provided here: https://en.wikipedia.org/wiki/Mesh_networking

In 1991, a more famous panorama was drawn over Deptford riverside, a geography which will profoundly alter this social landscape for years to come.[4] When Tory minister Michael Heseltine launched the 'City Challenge' regeneration plan, Lewisham participated with its Deptford small riverside. This is mostly occupied by the vast Pepys Estate and Creekside. Although all indicators of poverty concurred in pointing to these areas as having derelict housing and a vast low-waged population (Centre for Urban and Community Research, 1997), City Challenge seemed to bring a more profound social change to Deptford: a 'gateway' between its poverty and the affluence of nearby Canary Wharf (Keith, 2005). Lewisham Officials first took Heseltine to the bottom of Canary Wharf towers, then on a boat to Deptford riverside, and finally,

> *Heseltine was taken up into the sky over Deptford's mass of derelict social housing and he toured the run-down industrial estates in helicopter. The landscape below him was almost literally turned into a map that was subsequently recognised as a space of governmental intervention, the territory that defined the borders of the urban regeneration initiative of Deptford City Challenge.* (Keith, 2005, pp.76–78)

As part of the plan, Lewisham Council sold Aragon Tower, the tower closest to the river, to Berkeley Homes PLC. Despite the fierce protest of residents and anti-gentrification activists, its social tenants were evicted. Lewisham Council even offered a chance to the evicted residents: 'The homes in Aragon Tower will be sold or let on the open market and those Pepys residents who wished to do so would be able to register an interest in them'.[5] Finished in 2006, 'Z Apartments' featured no social rented accommodation and four additional floors to the top with 14 luxury penthouse apartments: 'Judging from the brochures, the plan is to turn it into a luxury development for people who drink champagne all day, pausing occasionally to check their stocks and shares on a laptop',[6] writes a commentator on *The Telegraph* only a year later.

The story was captured over three years by a BBC documentary, which won the

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4   I here follow the account that Michael Keith gives of the events (2005).
5   http://www.indymedia.org.uk/en/2005/02/305021.html
6   http://www.telegraph.co.uk/culture/tvandradio/3666105/Last-night-on-television.html

Bafta award in 2007. The Dickensian opening sets the pace of the series: 'London, for the people who live here, it can be the best of times and the worst of times' (The Tower: A Tale of Two Cities, 2007). Wealthy newcomers—like Heseltine years before—were taken to Deptford by boat. They are often filmed drinking wine and looking over the Thames, towards Canary Wharf and Greenwich reach. New residents' gaze is turned away from inner-city Deptford, which rather remains a great cause of concern for their own safety. Locals' loud presence is often felt, but only from the safe distance offered by the tower heights (see Back, 2009). Pepys Estate residents responded with a participatory video, funded by the Joseph Rowentree Foundation (The Case of the Towers, 2008). They exposed the BBC narrative as carefully profiling people and events: for instance, 'two drug-addicts were showed every week on the program, every week they were there; they even showed them to inject three times: why?', asks one resident who also appeared on the BBC documentary.

These three vignettes hopefully give readers a socio-historical insight on the territory, while conveying the two main themes developed in this paper. One suggests that riverside Deptford is experiencing a wave of gentrification whose effects are felt deep by local working-class residents. The other insight is that wireless networks do not happen in a *vacuum*. 'Hackers' and users of OWN are also urban dwellers and residents of this quickly gentrifying neighbourhood. Technology and gentrification are both part of their daily experience of place. These are sometimes connected in the sense that the paper tries to untangle.

From the top of Pepys tower blocks we now descend into the streets of inner Deptford, following wireless signals from a home-made mesh network. This is inspiringly called OWN.

Illustration 2: Mid-level panorama from OWN node at the Pepys Estate, Deptford.

A bunch of aerials

You have a bunch of aerials and they exchange info. Each point on the network, nodes, can act as a repeater and access point. OWN also provides Internet connectivity and this is shared over the mesh. Because of the speed involved, it is not good for videos, but it is for general browsing. (OWN host)

I sit in a bright living room in one of the first flats to have a node. The host speaks at length of his involvement with developers and technologies of the network. We both relax at the common understanding that the conversation is not around the codes and protocols behind OWN: 'I am not sure about the technical details', my interviewee hopefully suggests, although he provided the accurate description above. At the end of our chat, he invited me to see the aerial on the rooftop. This expands wireless signal (and ultimately free broadband) to the High Street below. It is a sunny market day in Deptford and the street looks like a busy inner-city landscape, packed with people, goods, and all sort of sounds and odours. Beautifully put, the market sells 'the stuff of and for the everyday, and it has an ordinary, unpretentious feel, serving a mostly local clientèle of Afro-Caribbeans, Chinese and white British' (Back and Lyon, 2012). Despite the network is designed around anonymity, the provision of a free service has been immediately translated into a form of gift economy: 'I told someone in the market once: you can get a bit of a free Internet if you need it'.

Open Wireless Network started in 2008 from the rooftops of SPC, an iconic hack space on the border between Greenwich and Deptford—although, 'we already made a mesh network to Deptford in 2001: a bit like playing with radios and walkie-

talkies', James proudly explains to me. He is the founder of OWN and the facilitator of myriads of projects, workshops, hacks, and installations. Soon after its establishment, OWN picked to almost 60 nodes and over 400 users at one time, mostly along the Creekside.[7] In the last years, the project went through a period of disinterest and decline since 'with so many people carrying Smart phones, Tablets and Laptops—many with 3 and 4G network access as standard—some of the passion for independent infrastructure building has fallen away'.[8]

Wireless technologies promised a structural change in the way we communicate in cities, made of ubiquitous connectedness and freedom from centralised control. Due to lack of cabling, wireless connections potentially boast high performance for relatively limited costs (Akyildiz and Wang, 2005). Mesh networks exploded in popularity during the early 2000s, when Wi-Fi protocols were standardised. Bar and Galperin suggested that 'it is possible to imagine a future in which ad-hoc networks *spontaneously* emerge when enough Wi-Fi devices are present within an area' (2004, p.274, emphasis added). Rapidly diminishing costs in Wi-Fi equipment, flexible policies and the emergence of a myriad of contractors—such as cooperatives, small Internet Service Provider (ISP), business and local authorities—have been critical factors in wireless network resilience and popularity, at least in the Global North (Forlano, Powell, Shaffer and Lennett, 2011).

There is now a significant literature around the relationship between urban space and communication infrastructures. Graham and Marvin pioneered critical research trajectories in this field by linking technologies and infrastructures with the 'urban condition' (2001). They suggest that, under the urban process of capitalist accumulation (see Harvey, 1978), physical and socio-technical infrastructures generate fragmentation of services and utilities, with their privatisation, commercialisation, and reduction to individualised consumer's choices. 'Splintering urbanism' was a turning point in the way in which infrastructures became woven

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7   The river Ravensbourne enters the Thames at Deptford and divides the borough of Greenwich and Lewisham. Its tidal reach is known as Deptford Creek.

8   At the moment of writing this piece, OWN managed to secure some extra funding and new partners, see here: http://spc.org/mazi-mondays/

into narratives of city change and development. Neglecting the centrality of infrastructures would lead to technological determinism: 'It means that radical changes in the social organization and supply of networked technologies go unnoticed' (Graham, 2001). In the three paragraphs below I maintain that Graham's concerns for the splintering of infrastructures, around social and cultural dimensions of space and class, are still valid in relation to wireless networking.

Firstly, because funding is a critical issue for the development of independent wireless networks (see Forlano et al., 2011). The ability to allocate resources, bandwidth and speed, remains important. For instance, OWN gets broadband provision from a higher hierarchy level, Tier 1.[9] A more robust bandwidth allows in fact a higher number of users connected at any time. It also enhances strategies of connectivity across neighbourhoods where high-rise buildings risk blocking the wireless signal.

Secondly, because wireless networks are often *increasing* the gap between developers and users of the mesh (Medosch, 2015). Many networks, in fact, have evolved towards a commercial model acting like Internet Service Providers: wireless is now experienced passively as free access to the commercial Internet without engagement with the technology that makes it work. In other words, wireless mesh are black-boxed again. Medosch's critique of Berlin-based Freifunk[10] is relevant to this paper. It underscores the very notion of participation to the construction of wireless technology—which initiatives like OWN promoted with its training sessions, 'Wireless Wednesday'.

Thirdly, because gentrifying neighbourhoods imply geographical displacement of people committed to the cause of the commons—hacktivists[11] but also, in my focus, working-class residents. Additionally, gentrification brings forms of cultural displacement (Marcuse, 1985; Slater, 2009) since gentrifiers boast new attitudes, models of consumption, and lifestyle expectations which sit at odds with the politics

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9   https://redrawinternet.com/internet/
10 https://en.wikipedia.org/wiki/Freifunk
11 See Medosch, cited.

and practice that networks like OWN delivered. I will return to this important point towards the end of the paper.

In order to further understand the social dynamics around wireless technology, I now draw on an extended version of the Social Construction of Technology (Bijker, Hughes and Pinch, 1987; MacKenzie and Wajcman, 1985; Prell, 2009; Klein and Kleinman, 2002). SCOT suggests an anthropological-historical approach to the study of technological development, asking *how* technology is made and *how* it is used: a process of unboxing technologies that is alternative to technological determinism. It thus highlights the singularity of each technological assemblage and the social milieu in which knowledge is acquired. For instance, design of technologies becomes a narrative within a relevant group (e.g. hackers), where specific (alternative) uses of technological objects are sought, and peculiar power relations are developed (see Alleyne, 2011). Unsurprisingly, scholars adopting this framework prefer a qualitative approach such as participant observation, interviews, ethnography, archival record collection, and other forms of historical analysis.

For Forlano (2008), the social construction of wireless technology makes evident the disjuncture between media representation of ubiquitous connectivity and its everyday use. In trying to go beyond the rhetoric of 'anywhere, anytime', my ethnographic material wants to communicate the great amount of time, efforts, and dedications that some have put into the installation and maintenance of the network:

> *5-6 years ago James brought 'the box', dug a whole in my bedroom, run the cables to the roof. He made a bit of a mess [laugh] but it was all right. We had rain water coming in once and 'the box' had to be changed. (OWN host)*

Equipment and skills have a geography, being embedded in real places. The provision of nodes, for instance, was regulated by a small one-off fee to contribute to the costs of 'the box' (mesh router and, sometimes, aerial). OWN developers dedicated a lot of voluntary work in maintaining the network: 'From a sociological perspective what is remarkable is the sheer array of stuff, people and places involved

in making and re-making Wi-Fi', rightly suggests Jungnickel (2014, p.3). Wirelessness is now questioned in terms of its 'banal' socio-technical implications (Michael, 2006; Mackenzie, 2011), in/visibility (Jungnickel, 2014; Graham, 2010), and control it generates (Kitchin, 2011).

In making 'things' work, there is then an intense process of negotiation and knowledge transfer between users and developers of the network. The extract below is part of a discussion on how to prepare users to the services offered by the mesh, in this case file-sharing. The discussion takes place around protocols to implement, software to install on 'the box', and design features of the mesh (e.g. whether to have a splash page with an invitation to join or rather a list of services on offer):

> *OWN can be about file-sharing assuming you prepare the users of the network to do file-sharing, e.g. a music collection becomes available on demand, it is not broadcast. That is the main difficulty: how to advertise the service, how you make that info available. (James, founder of OWN)*

For years users and hosts have been meeting every week at bitspace, where drop-in training sessions take place. 'Wireless Wednesday' is a kind of social technical club for chit-chats around communication technology—computers, primarily, but also mobile phones and anything in-between. 'It's an open space for people who use OWN to come down and discuss issues they have with it, or whatever really'. Among jokes, biscuits and teas, software and hardware seem to come alive in unexpected performance (see Mackenzie, 2005): 'I think the proper social network is bitspace. Only when things break down or don't work, people want assistance', suggests another host of the network.

Technologies we take for granted in our everyday practices demand in fact induction, participation and care. This is where training and support become strategic, enabling a bond dictated by practice. The knowledge transfer generated during training sessions, and the social capital that training produced, are crucial to the project: 'OWN was to expose the idea of mesh network in a way that people would get *an experience* that was both practical and informative' (James, founder of OWN, my emphasis).

Knowledge transfer has also helped the development of this paper, produced with Free and Open Source Software (LibreOffice for the text, Zotero for the references, Gimp for the photographs). In a sense, the paper has been open and participative although it has not been written *together with* the participants, and of course it is not a *wiki page* where any subscriber is allowed to amend it. Like the social construction of this wireless network, however, the paper underwent attempts, corrections, and new suggestions. I often edited the draft while sitting at bitspace, and sometimes people there interacted with the text and photographs as these progressed.[12]

The place of space in wireless technology

The literature on urban wireless networks increasingly suggest to take into account, technology, people and urban space (see Foth, Choi and Satchell, 2011; Forlano, 2009; Antoniadis and Apostol, 2014). A multidisciplinary approach to mesh networks like OWN, in fact, can be crucial to a better understanding of city inequalities, in terms of power or access to infrastructures of communication. It allows to get to place from a technology-centred perspective. It simultaneously starts from the production of urban space to get to a better understanding of technology making.

Many contributions, however, seems to neglect a critical perspective on how space works: 'Media studies appear[ed] less prone to "following through" to the level of spatial production' (Tarantino and Tosoni, 2013; see Aiello, Oakley and Tarantino, in press).[13] Despite drawing on Lefebvre's critical scholarship, Foth (2009), for instance, uses the metaphor of city-body in order to integrate urbanism and media ecology: city is thought as a 'living organism', 'alive with movement'. He asks, 'How do the cells of the city cluster to form tissue and organs?', that is, 'How do various

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12 A draft copy has been made available on the public Internet from the start, under Creative Commons (see my *Shelf* at http://kiddingthecity.org). I take a chance to also warmly thank the two peer reviewers for their compelling suggestions.

13 This is bizarre considering, for instance, Sundaram's research around modernity as an attempt to organise *both* infrastructures of communications (media) *and* spatial city arrangements (master plan)—and the consequent role piracy has as a 'key interface' between media technologies and larger urban infrastructures (Sundaram, 2010).

systems communicate and interact with each other?' (2009, p.xxviii).

In more recent studies of wireless networks, 'hybridity' appears to regain popularity. Hybridity addresses the complication of living an online experience embedded in physical places and limited by material resources (cables, radios, aerials, etc.). For Antoniadis et al. (2014), hybridity is a crucial concept, whereas the 'virtual space is a layer of the physical urban space'. Digital and physical worlds are here kept apart, although intertwined. According to Forlano (2013) 'hybrid notions do not go far enough in advancing theories around urban technology and the role of place'. Urban technology, she further suggests, is a 'rather quite incongruous' process which does not happen in layers. Her 'new lexicon' for media and the city, however, still seems void of gentrification and displacement.

To my mind, a debate on virtual and real places, on-line and off-line communities, risks to hinder the understanding of *how* wireless networks are produced or function, for instance in a gentrifying area in inner-city London. In his powerful book, Tung-Hui Hu (2015) deconstructs the disembodied imaginary and symbolisms conjured by the cloud (or the 'network of networks') by looking at the historical infrastructures that underpin networks and cloud computing. He writes, 'The cloud, as an idea, has exceeded its technological platform and becomes a potent metaphor for the way contemporary society organizes and understands itself' (2015, p.XIII). As I try to show in this paper, Wi-Fi networks like OWN mostly operate by strengthening social interactions and relations on the ground, rather than in an imaginary cloud-space. The cultural disposition of people directly involved in using the wireless network is, in my view, the crucial element that sustained the mesh. For instance, there is an underlying commitment in caring for other people around and in sharing the limited resources one has:

> *A similar project [to OWN] was done by James and few others in an estate in Kingston, South West London, in 2007-2008. It was a huge estate. And they found that very few people were taking up the free Internet and you know why? No one could really afford a computer. Hardware was still quite expensive... (OWN host)*

14

There are however moments in which the 'pressure of displacement' on my interviewees, both hackers and users, is already acute. Marcuse (1985) describes this as a psycho-social condition, which includes changing composition of own neighbourhood and lifestyles: shops become expensive, neighbourhood is felt as less friendly because attitudes change, spaces are sanitised, and previous social networks get dispersed. At bitspace, talks about affordable rent solutions sometimes intertwine with discussions about switches and cables; at other times, new artisan bakeries on Deptford High Street or the nearby Goldsmiths (University of London) are referred to as 'posh bread' and 'posh kids'.

This is a space characterised by 'digital divide' which turns out to be also a space of struggle and displacement caused by unequal access to housing, services and lifestyles. The study of infrastructures can reveal social orderings nested in everyday practices. This is because infrastructures both deliver and are the 'stuff' of everyday —water, electricity, waste disposal, the Internet. Infrastructures produce 'the ambient conditions of everyday life' as an embodied experience (Larkin, 2013). Since infrastructures are simultaneously ecological and relational, they are particularly productive in showing emotional investments, social suffering and exclusion (Larkin, 2013; Rodgers and O'Neill, 2012; Star, 1999).

We can formulate each of the paper research questions—city space as the 'context' in which the wireless network develops and, consequently, how the gentrification of this space might influence such an infrastructure—by looking at the panoramic photograph above and at the map below (Illustration 2 & 3). In the former, the relay node 'listens' to a router which has access to the public Internet, at the bottom of the opposite tower: 'The shop at the corner [of the Pepys tower block] is actually a community space, Coopepys.[14] We used to have 4 routers on the Pepys Estate for many years', says James while looking at the photograph. In such an enclosed built environment the wireless wave seems, and eventually is, deeply constrained. At the same time, each resident of the surrounding flats, as well as their visitors and passers-by, becomes a potential host or user of an ever evolving network. Each

14 https://coopepys.wordpress.com/about/ (please read Response to 'About'). Also here: http://tiny.cc/xdas4x

installation, connection, and support narrates a different story of trust, friendship, negotiation or betrayal. Of new relations and commitments. Of frustrated attempts and successful experiments. Of outreach towards potential node hosts or new vantage points to exploit.
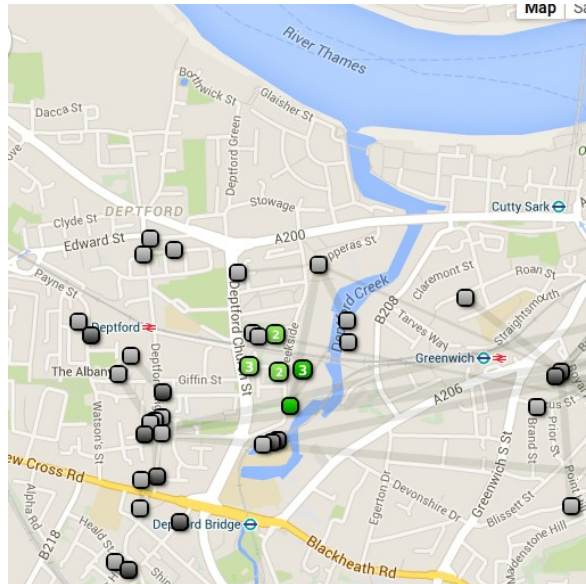

Illustration 3: Screenshot of OWN Map with focus on the Creekside, Deptford.

Similarly, the Google-like map of OWN shows proximities and linking of different nodes. By hovering the mouse or clicking on the node icon, we can see the number of users connected to each of them.[15] The flatness of this cartography simplifies the workings of the network, making it legible as a metaphor of data flow. It immediately makes visible the taken-for-granted waves of Wi-Fi connectivity. The map, however, erases the entanglements of people, buildings and infrastructures, as well as the limitations and opportunities offered by technology and urban environment.

These two images hopefully convey ways in which 'the urban' contributes to stretch wireless technologies. OWN is not a corporate project of infrastructure provision

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15 For a 'live' version see: http://spc.own.org

and control, but a patchwork improvisation that takes pieces from lots of formal provision networks: the evolving wireless network maintains a status of an utterance in the planned and organised city. These technologies are made and remade in response to new problems and solutions, encounters and exchanges, which cities are ready to offer. A daring question around OWN would then be about the impact that the gentrification of Deptford has on its functioning, especially in proximity of its Thames and Creek riversides?

I will complete the 'Fall of Icarus' (de Certeau, 1984) to the streets by narrating the story of some participants to OWN.[16] The social activity which goes alongside maintenance of the network generates, in fact, a different connectivity made of very material and face-to-face encounters on the ground which probably have little to do with the promises of ubiquitous wireless connection. The circulation of affect and actions that this connectivity generates is rather an established working-class disposition for sharing and living with, supporting and helping others (see Skeggs and Loveday, 2012). My ethnography thus suggests that the social landscape of Deptford has been partly responsible for the development of OWN.

Illustration 4: Ground-level panorama of the Pepys Estate with mural, Deptford.

Icarus Descending

The above panorama is taken at the bottom of the Pepys tower block, in the reach of Coopepys node. In the middle of the image, a mural shows the outcome of a resident-led renovation project. Pete Pope, a well-known Deptford resident, contributed to its making. Although Pete never owned a node, he was actively

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16   Some extracts appear also in a forthcoming book chapter.

following the development of OWN. In the photograph below, he is seen setting up an aerial in Deptford adventure playground. Pete was a 'regular' at the weekly workshops, Wireless Wednesday. This space has been a catalyst for knowledge transfer: some users in fact become producers of OWN, in the sense that they contribute to share software solutions, to provide some hardware maintenance ('the box', cables, aerials, laptops), and to bring others to the free wireless provision (word-of-mouth, outreach).

Illustration 5: Adventure playground panorama with OWN volunteers setting up an aerial.

When Pete prematurely passed away, hosts and known users of OWN as well as friends and community activists started a cheerful and noisy procession from The Birds Nest pub—this has been hosting a node for long time. Pete walked once more along the Creekside in Deptford, passing by some of the nodes along The Crossfield Estate. This was built in 1930 as part of a first regeneration effort in the area: close to the docks and slaughterhouses on the Creek, in fact, this part of Deptford had scored very badly in Charles Booths' survey on London poverty, only a few years early, hitting the 'Very poor, casual, chronic wanted' and the 'Lowest class, vicious, semi-criminal' categories (Lewisham Council, 2012). A turning point in the history of the estate was the mid-1970s decision to favour occupancy there for young single professionals—teachers and students from the nearby Goldsmiths for instance.[17] The Council's move, while stimulating punk-pub and progressive art scenes for Deptford during the 70s-80s, allowed *de facto* 'first-wave gentrification' in the area. As

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17 The estate was at the time half-empty and run down, and deemed 'unfit' for the accommodation of families (Steele, 1993).

observed by sociologist Ruth Glass in 1963 Islington, London, these early gentrifiers typically 'pioneered' in inner-city neighbourhoods: 'It was largely liberal lefties who moved back into the inner cities, and living among the working class was part of the appeal'.[18] The Crossfield Estate has been rightly included in the 2012 conservation plans for the Creekside, retaining its 'high social value for residents, artists and the Deptford gay community' (Lewisham Council, 2012). The unusual allocation policy, however, now feeds into a narrative of Deptford as a 'long-term cultural hub'.[19] This narrative typically positions (white) middle-class people as a civilising force in the working-class cultural landscape of Deptford. Gentrification appears as a benevolent, although necessary, 'turn of the tide' in an ever changing city, promising 'trickle-down effects' for the surroundings. At the same time, this narrative hides the cultural displacement of the numerous second-generation British-Caribbean youths who had community dance-halls or sound systems scattered in the neighbourhood, as well as the crucial role that the hybrid music scene had in forming 'racial relations' among youths in the area (see Back, 1996).[20]

Pete's last walk symbolically ended on the Ha' Penny Hatch Bridge. This is a little bridge on Deptford Creek which connects the densely populated estate to Greenwich and its historical amenities. It was eventually built in 2002 as part of the Creekside regeneration programme (Small Regeneration Budget), thanks to the struggle of local activists and residents, including Pete.[21] His ashes were scattered there, in the water near the Creekside Discovery Centre, where another OWN node is active.

Creekside is the latest gentrification frontier in Deptford. It has all the ingredients for a cocktail of urban change and displacement. As most of Deptford, it has a large concentration of migrant population, and this historically carries a potential for higher differential in rent (Keith, 2005). Deptford Creekside is at a short distance

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18 See Loretta Lees on *The Guardian*: http://www.theguardian.com/politics/2015/aug/09/blair-corbyn-islington-north-london-labour.

19 See this report commissioned by the developers of the highly controversial Convoy's Wharf on Deptford Riverside: http://futurecity.co.uk/portfolio/convoys-wharf/

20 Watch Dr. Lez Henry and Prof. Les Back talking about the social history of sound systems in Deptford http://tiny.cc/bp3xcy

21 See (Deptford.tv 2008, 51).

from Canary Wharf and Greenwich, and this stimulates the demand for new housing among high flying brokers and heritage lovers. New-build housing on the Creekside commands over £700 per sq ft, 'reflecting the significant latent demand for high quality residential accommodation, strong investment and *lifestyle attractions* of the area'.[22] Among these attractions, it is Deptford 'vibrant' cultural quarter: according to the marketing material for the new-build Creekside Village,[23] Deptford is 'the new Shoreditch' with 'more artists per square mile than anywhere else in the capital' (see Harris, 2012; Pratt, 2009). The dynamics between cultural quarters and the displacing forces of capital are thoroughly analysed by Keith (2005). These forces combine the rising importance of cultural industry and the promotion of multiculturalism as central elements in the preference for housing. To say it with Neil Smith, gentrification is now an endeavour much larger than the differential in rent: it is rather 'the class remake of the central urban landscape' (cited in Keith, 2005, p.121).

Illustration 6: New Village development on the Creekside, Deptford. View from the water.

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22 Developer's brochure, my emphasis. http://www.creekside-kentwharf.co.uk/
23 Ibidem.

There is an intrinsic paradox in framing Deptford as a cultural quarter because many warehouses on the Creekside, which hosted affordable art studios, have now been demolished in order to make room for new upmarket developments. This is a dilemma that private-developers-driven regeneration of cities brings about: 'cool places' attract new capital, and this will erase the character which initially made that place so peculiar and attractive to investors and private buyers.

Illustration 7: Mouth of the Creek, Deptford. View from the water.

Pete had a certain attachment to these waters. He notoriously dressed up as Lord Nelson to protest Convoys Opportunity's plan. This aimed to turn the dismissed Convoys Wharf on Deptford reach into a cruise liner terminal with annexed luxury developments.[24] His face now appears on the 'Wall of Ancestors', a sculpture that commemorates famous residents of Deptford, at the bottom of the 'Z Apartments', as

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24 That was 2005: the planning for the terminal has more recently been affecting East Greenwich reach.

they call it now. In an interview realised for Deptford.tv,[25] another project connected to OWN developers, Pete declares: 'This so-called "regeneration process" has been grinding across Deptford for the last 20 years'.[26]

The story hopefully gives the sense that OWN has been more than a free wireless gateway to the 'commercial Internet'. I would argue that OWN is an *experience* intertwined with users' daily geography of gentrification and displacement (see Lees, 2000). I have shown this by describing the efforts to maintain a functional network across council flats and estates, as well as to outreach new users and nodes around this peculiar neighbourhood. As one host concludes, 'I think OWN is a shared resource and that's what makes it a little bit more interesting'.

OWN is in fact based on a gift economy made of shared broadband as well as ongoing maintenance of software and hardware. To my mind, Pete's send-off further shows this circulation of actions and affect. This is a central argument in my research. In their study of working-class personhood, Loveday and Skeggs invite us to think of 'value' not just in economic terms (accrual of various forms of capital), but also 'relationally, as a more general ethos for living, for sociality, and connecting to others, through dispositions, practices and orientation' (2012, pp.475–476). From my participant observation and fieldwork material, I would argue that OWN contributed to building and circulating a certain type of *experience* that is rooted into the social fabric of working-class Deptford: 'OWN is about local people who give a bit back to other local people in the area. I have been here for 12 years … there is not much money in the area, you know', says another host.

This *experience* is readable through people and spaces that are now under intense displacement pressure. This is because gentrification is about *both* the transformation of the Commons into the neoliberal logic of privatisation of space *and* the displacement of working-class residents with their everyday cultural practices, attitudes, and lifestyle.

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25 http://deptford.tv
26 The video is available on this excellent blog by Transpontine:
    http://transpont.blogspot.co.uk/2012/05/pete-pope.html.

Illustration 8: Wireless Wednesday at bitspace, Deptford-Greenwich.

Concluding remarks: Icarus on the ground

According to OWN developers, its likely scenario is to evolve towards ad-hoc services, such as on-demand file-sharing between peers, or very localised forms of collection and dissemination of smart data.

> *OWN was about operating an independent infrastructure. [...] We are now evolving towards a model similar to the Intranet of the 90s: 'walled gardens' of off-line networks. (James, founder of OWN)*

In a sense, within the wireless reach of a mesh network we have an inversion of the paradigm of Internet freedom. Wireless mesh can rather perform as a closed network, potentially offering the freedom of tailored services away from the surveillance gaze—of the state or commercial tracking. Another way of seeing this is in terms of market's failure to provide certain services: secure digital connections and unrestricted access to, or sharing of, digital resources.

To my mind, the problem that wireless networks like OWN face is the coming together of two opposite forces. One direction pulls towards the 'local'—sharing

resources and data, bandwidth and bulletins, usually within the limited reach of the wireless wave. But the 'local' is not just the *locus* for direct involvement, neither is here intended as opposite to 'global'. Importantly for the functioning of OWN, the local is where a gift economy of exchange and expectations materialises.[27] This gift economy is expressed via the sociality of the mesh, for instance in relation to outreach of new hosts and negotiation of bandwidth provision. In this sense, the 'just city' passes through dis/organisation of infrastructures of communication, by taking into account equality and freedom of access, privacy and security rights, knowledge transfer and ability to choose software solutions (see Isin and Ruppert, 2015).

The other force seems to tear apart that neighbourliness on which wireless connectivity relies. This is because of the ongoing privatisation of residential solutions for new upmarket buyers and the consequent displacement of working-class residents. The paradox of 'proximity' in a gentrifying neighbourhood—wireless networks are necessarily territorial—puts at the centre of the organisation and maintenance of an open wireless network a slightly different notion of the 'just city'. From my preliminary field observation and findings, there is a sense in which new enclaves of luxury flats can limit the outreach efforts for new nodes. This is for two sets of reasons. Firstly, because the physical city now boasts more secluded enclaves. Secondly, and more importantly, the gift economy on which OWN is based might be negatively affected by individualised lifestyles and aesthetic consumerism.

This is to say that gentrification operates on two interconnected levels. The first and more obvious level is that it expresses a neoliberal reorganisation of urban space, because it forges residential opportunities only suitable for middle-class people (*direct and exclusionary displacement*). The second level is the flipside of the previous one, although often concealed (see Slater, 2006): gentrification implies *cultural displacement* of working-class residents, with their disposition and practices for sharing resources, caring for, and linking to others.

More longitudinal research is needed to establish what evolutionary trajectory Open

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27 This tension of proximities and divergences—an open, but off-line network—is rendered in OWN users' involvement with their local social landscape (forthcoming).

Wireless Network will take in relation to the changing urban scenario that hosts it. This paper has exactly suggested the centrality to OWN of a working-class cultural disposition for sharing and caring, as users and hosts of the network have showed me in the last few years. Its unstable patchwork improvisation—made of places, people, and technologies—may indeed result in a resilient response to neoliberal organisation of urban space: an utterance in the planned and organised city.[28] Whatever course OWN will take, I hope it will continue to limit, at least on exclusionary and cultural grounds, the displacement that new-build gentrification has been perpetrating in Deptford and inner-city London in the last years—a 'hack' to gentrification?

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