

An Informational Right to the City? Code, Content, Control, and the Urbanization of Information

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Abstract: Henri Lefebvre talked of the “right to the city” alongside a right to information. As the urban environment becomes increasingly layered by abstract digital representation, Lefebvre’s broader theory warrants application to the digital age. Through considering what is entailed by the urbanization of information, this paper examines the problems and implications of any “informational right to the city”. In directing Tony Benn’s five questions of power towards Google, arguably the world’s most powerful mediator of information, this paper exposes processes that occur when geographic information is mediated by powerful digital monopolies. We argue that Google currently occupies a dominant share of any informational right to the city. In the spirit of Benn’s final question—“How do we get rid of you?”—the paper seeks to apply post-political theory in exploring a path to the possibility of more just information geographies.

Résumé: Henri Lefebvre parle d’un “droit à la ville” comme allant de pair avec le droit à l’information. Alors que de plus en plus de représentations numériques abstraites se superposent à l’environnement urbain, la théorie générale de Lefebvre mérite d’être appliquée à l’ère du numérique. En se penchant sur les enjeux de l’urbanisation de l’information, cet article analyse les difficultés et les implications d’un “droit informationnel à la ville”. Après avoir posé à Google, le vecteur d’information le plus puissant du monde, les cinq questions que Tony Benn avait adressées aux détenteurs de pouvoir, le texte expose les processus dérivant de l’intermédiation de l’information géographique par de puissants monopoles numériques. Il montre que Google occupe actuellement une position dominante dans tout droit informationnel à la ville. Dans l’esprit de la question finale de Benn—“Comment peut-on se débarrasser de vous?”—cet article vise à appliquer la théorie post-politique afin d’explorer les voies vers des géographies informationnelles plus équitables.

Keywords: Lefebvre, urban, ICTs, post-politics, right to the city, Google

Should we feed all the data for a given problem to a computer? Why not? Because the machine only uses data based on questions that can be answered with a yes or a no. And the computer itself only responds with a yes or a no. Moreover, can anyone claim that all the data have been assembled? Who is going to legitimate this use of totality? Who is going to demonstrate that the “language of the city”, to the extent that it is a language, coincides with ALGOL, Syntol, or FORTRAN, the languages of machines, and that this translation is not a betrayal? Doesn’t the machine risk becoming an instrument in the hands of pressure groups and politicians? Isn’t it already a weapon for those in power and those who serve them?

Henri Lefebvre (2003:59) *The Urban Revolution*

Introduction: The Urbanization of Information

In prioritizing urban space as the object of political struggle, Henri Lefebvre conceived of a “right to the city” as a broad and ambitious transformation of political life. Amongst other things, this demanded a renewed access and self-management of resources, surplus production, and the urban core (Harvey 2012; Lefebvre 1968). Importantly, Lefebvre also called for a complementary “right to information” that would assist in facilitating a withering away of the state and superseding *metro-work-sleep* with a more egalitarian and fulfilling urban society (Lefebvre 1990). He argued that such concepts would help dispense with the “urban problematic” as produced and ideologically sustained by the forces of capitalism (2003). Examples of this might include uneven development or notions of scarcity and public consultation.

However, given that the world’s urban population now has more access to information than ever before, and yet urban injustice persists *en masse*, we contend that the right to information is now a more complex aspect of political struggle than Lefebvre could realize (at the time). And, that a right to the city now depends upon a better reading of today’s critical phase in urbanization as a period where the city is increasingly reproduced through digital information (Shaw and Graham 2017).

Lefebvre’s original discussion of the production of space and political struggle was marked by his understanding of “abstract” space as produced and controlled by urban planners and architects (Lefebvre 1991:229). But today there is a newly dominant source and mediation of such abstract space that permeates the city: the flows of representations produced and mediated through digital information which now contribute to a densely digitally layered urban environment (Graham et al. 2013).

The ubiquity of digital information and communication technologies (ICTs) that produce and distribute this abstract space is now central to the reproduction of urban space. Kitchin and Dodge (2011) have, for instance, focused on the ways that computer code can shape how spaces are brought into being. Graham et al. (2013) similarly point to the ways that digital information can augment spatial experiences. While none of these authors explicitly draw on Lefebvre, such explicit conceptualizations of the spatiality of code and content serve as a useful starting point to begin thinking about the problematic entanglements between digital information and a Lefebvrian understanding of abstract space. From smartphone applications to GPS devices, Uber, Wikipedia and TripAdvisor, the code and content relating to the buildings and spaces of our cities is often as important as their bricks and mortar. Consequently, the power afforded to traditional actors of urban power—developers, planners, landlords—is now rivalled by the rise of new informational monopolies such as Alphabet Inc.’s Google.

In this respect, much as the city has been conceptualized as the correlate of the road, so too it may now reveal itself as the correlate of the optic fibre. Urban society is now materially produced as a function of networked informational circulation—a point defined by entries and exits (Deleuze and Guatarri 1997). The urbanization process has now assembled ICTs and people as a productive force that is both powerfully creative and planetary in scale (Brenner 2014; Lefebvre 2003:173). To

develop Lefebvre's right to the city in this context, we argue that the city must now be read as unequivocally informational, and with a renewed attention to such flows of digital information. Flows which are produced and mediated by a technology that further saturates the urban environment and yet which also retains the city as a primary site of experimentation (Luque-Ayala and Marvin 2016:194).¹

From a perspective of spatial justice and a right to the city, a key task of this reading is to critically examine the power relations around conduits of digital information as it becomes urban: the *urbanization of information*. Just as the urbanization of water is a processional notion which can uncover "stories about the city's structure and development", so can a reading of the city's "political, social, and economic conduits" through which information flows also "carry the potential for an improved, more just, and more equitable right to the city" (Swyngedouw 2004:4). The urbanization of information is now just as relevant to questions of spatial justice and the city as those which surround other historical infrastructures and commodities. And so, the original division between a right to information and the right to the city is also problematic inasmuch as ICTs have become an integral part of everyday urban life. Information produces space and the urban environment; it circulates as a commodity which can be accumulated; and we have become increasingly dependent upon it. This raises many questions: What occurs when information becomes the urban? What spatial processes typify the reproduction of the digital-informational city? And how is this relevant to spatial justice and the right to the city?

In order to demonstrate such relevance of ICTs to power and a right to the city, we use the five questions of power posed by British Labour politician Tony Benn in 2001: "What power have you got?; Where did you get it?; In whose interests do you use it?; To whom are you accountable?; And, how can we get rid of you?" (UK Parliament 2001).² Instead of directing those questions to individuals like Joseph Stalin or Bill Gates, we now direct them at a theoretical case study of Google, in order to better understand Google's power over urban information. And more importantly, to approach the ultimate question of democracy and a right to the city: "How do we get rid of you?" In doing so, we hope to avoid a post-political reading of Lefebvre (Purcell 2002), and will achieve this by directing our discussion to three principles for properly political acts: a need to enunciate dissent, traverse the fantasies of the elites, and refuse to act as we are invited (Swyngedouw 2011). This paper thus both illustrates the utility of thinking about the role of ICTs in any useful conception of Lefebvre's right to the city, and suggests ways that we might pursue any informational right to the city as a political project.

Google—What Power Have You Got?

We argue that Google currently has the power to curate an informational right to the city. This is because Google can *produce* urban space in the manner described by Lefebvre 1991, albeit via a dominance of abstract space that is contingent upon vast and ubiquitous flows of digital information. To understand the extent of this power, it is important to appreciate Lefebvre's assertion that a society's overall production of space can be conceptualized as the result of a spatial triad: a society's space is

produced through an interaction between “lived” spatial practices, the space that is “perceived” around us, and crucially, an *abstract* or “conceived” space (often as conceived by powerful technocrats). The interactions between all three are held to embody a society’s total social relations of reproduction, and so each society produces its own specific social space (Lefebvre 1991:26). Here, the role of what Lefebvre seemed to dismiss as “technology and graphics” is of special relevance to today’s dominant medium of abstract space—digital information (Lefebvre 2003:182). Our world is one now dominated by abstract spatial projects that range from traditional concepts of neighbourhoods and maps, to a new era in real-time data visualizations, models, path-finding algorithms and Pokémon (Hern 2016; Madden 2014:479). None of which seem materially real, yet all constitute reality through their “deeply, troublingly real” role in the (re)production of material space (Merrifield 2015).

Hence, the *ubiquity* of digital technology within the urban environment marks an important departure from Lefebvre’s century. Despite his visionary and prescient concern with models, “visualization logics”, or even e-commerce (Lefebvre 1991:41, 2014:824), he did not discuss a reality where these models would run riot within powerful, affordable and geo-located computers that count our steps from our wrists, monitor our sleep from our bedsides, or engage in the mass latte-art simulacrum that is Instagram.³ His broader theory must now be applied to an urban environment that has become a hybrid, densely layered and heavily mediated process (Graham et al. 2013); a material reality that is reproduced through endless examples of Internet-enabled geo-spatial information technologies and platforms. All of which have become essential forms of abstract space within everyday urban reality, meaning that place is more than something that just happens to have associated digital content. Cities are their digital-informational presences, and are reproduced as such.

Google’s unrivalled share in the informational mediation of this abstract space is highly significant. Its 90% European market share translates into a potential 550 million users of Google Maps (European Commission 2013), it accounts for 60% of all search queries globally (Jackson 2015), and it commands access to floods of user information streams across services that range from YouTube to Gmail and beyond. Through this massive aggregate power in spatial representation it influences where people go, how and when they get there, what they do, the geography and characteristics of economic or social and political activities, and especially, the way in which some parts of the world are made visible or invisible. It is by virtue of this control over digital information that Google has the power to control the reproduction of urban space. This is a power to choose how a city is reduced to information, and to control the manner in which it is translated into knowledge and re-introduced to material everyday reality (Lefebvre 1991:137, 230). Therefore, everyday urban reality is also increasingly reproduced as the space of Google—an increasingly measured and quantifiable space.

However, despite the undeniable utility of such quantified space within an “arena of practical actions” (Lefebvre 1991:288), it must be understood that this abstract space has very real and unexpected (and often undesirable) consequences for the city. As Google reduces the city to information, this process includes decisions

which are (opaquely, seemingly magically) made on our behalf: which voices, bodies, gestures and paths to include and which to exclude, including who or which spaces are reproduced as “outsider” or “other”. Therefore, attention should be paid to the fact that such digital information is already produced, consumed and accumulated to reflect starkly uneven patterns (Graham et al. 2015b). Or, that there is often more digital content available about small European countries like Belgium than there is about the continents of South America or Africa; and data presences and absences reveal that digital geographies can be as uneven as their economic counterparts. More importantly, such informational inequalities are not always direct representations: despite their claimed objectivity (Google 2015a), the various interfaces of Google also ensure that not every place is seen the same, and not everyone sees the same place (Graham and Zook 2013; Pariser 2011).

As such, there exists a potential to amplify a range of pre-existing spatial inequalities and create new urban divides through this dominance of digital information and spatial search. Less ubiquitous technologies that have warranted similar critical examination include Microsoft’s “Avoid the Ghetto” patent or “Pot Hole App” technology (Matyszczyk 2012). In these examples, it is easy to hypothesize that poorer urban areas might become worse-off and those that are adequately digitally connected thrive in clean, safe and well maintained streets. In Google’s more-encompassing case, the selective manner in which Google returns search queries to individual users of different languages might dictate that Hebrew and Arabic searchers move differently through Tel Aviv, reproducing existing segregation (Graham and Zook 2013). Or, that the disappearance of the word “Chinatown” from a particular neighbourhood in Google Maps becomes a real moment of victory or defeat for groups battling over a particular urban core, or “centrality” (Lefebvre 2003; Tosoni and Tarantino 2013).

Importantly, both of these examples also demonstrate how digital information complicates Lefebvre’s right to the city as a right to centrality,⁴ since the assertion that “centrality is always possible” is rendered moot by the ubiquity of digital information (Lefebvre 2003:130): how can anyone begin to approach “habiting” within the urban periphery when Google is already quantifying where, when and how they go there (in real-time): all with a view towards *advertising* these facts as such? Thus, over time, the flows of goods, services and people can be both monitored and re-aligned towards new cores of informational affluence—and away from informational peripheries—based on the algorithmic interpretation of gigantic databases controlled by a single monopolistic corporation. Lefebvre’s (2003:81) question of how to dwell in this quantifiable abstract space has never been more important.

Finally, it is important to understand these developments in the context of ICTs’ broader role within a “third industrial revolution” (Schröter 2012), or as an enabler of “frictionless” or “informational” capitalism (Castells 2010; Gates 1996). This highlights Google’s power in economic value creation, and it is within the city that such technology can become an innovation bound up with the urban matrix as a “rational landscape for accumulation” (Harvey 1989:23). In real estate alone the profitable applications of such information is endless. What is advertised today by Google (2014) as “radius bidding” might as well be called algorithmic blockbusting tomorrow⁵: instead of distributing malicious leaflets and signs to manipulate or

devalue land value in the 1950s, the instant redirection of pedestrian flows on one side of the road can now destroy the businesses on the other.⁶ Google's ability to mediate and redefine centrality is also a power to control flows of urban information as a productive force. Google can transform space into a (profitable) social product through its command of abstract space as digital information. It is a power that permits those who dispose of it "to control space and even to produce it" (Lefebvre quoted in Elden 2004:84). Hence, the landlord, developer and planning actors of Lefebvre's day are now complemented by a new type of actor in the production of urban space—one that endlessly operates upon social space through the medium of digital information.

Therefore, Google has become a dominant force in the informational reproduction of urban space for the vast majority of cities. Particularly in the global North, it is Google that now occupies a type of informational right to the city, and it will be Google that can increasingly control a city's surplus production or best further their own vision and ideology of how it might develop. The current urban form is typified by an assemblage and distribution of digital information over which Google can preside—a position supported by the dominant ideology of an abstract and quantifiable space that is filled with connected digital devices and subjects. Just as the agora became the shopping mall in Lefebvre's reading, now the people, objects and social relations within the shopping mall must all be digitally connected, quantified and informationally productive (Lefebvre 2003:9). This is the city of Google. In this respect, Lefebvre's assertion that we have moved beyond the production of things in space to the production of space itself rings true, but his conceptual separation of a right to information from the right to the city is challenged by digital technology: Google can amplify and reproduce space and spatial inequalities in its own distinct informational manner, including the rapid mediation and redefinition of urban space, urban centrality, and what is coming to be accepted as the "big urban problems" (Google Sidewalk Labs 2016). Both Lefebvre's political strategy and Tony Benn's second, third, and fourth questions now demand that we critically examine this power further in order to ultimately understand how to act.

Google—Where Do You Get Your Power From?

Traditional theories of power surrounding information mediators as "gatekeepers" have often struggled to deal with the many-to-many characteristic of Internet communication, but their focus on code and algorithms is a useful point of departure (Barzilai-Nahon 2008). Google utilizes vast amounts of software code to build algorithms which spatially sort and rank all sorts of goods, information and services. This code is part of a broader systematized architecture of data and governance, comprising huge linked datasets that form a vast interoperable database of geographic information (ranging from proprietary API feeds to commons-based resources like Wikipedia). These technologies of informational mediation are often drawn into debates surrounding the supposed democratizing potential of the Internet. In particular, the "black-boxed" and proprietary nature of algorithms (Introna and Nissenbaum 2000) has resulted in speculation surrounding the centralization of information in a "Googlearchy" (Hindman 2008); the role of

aggregating information based on the behaviours of others (Halavais 2009); and the potential for creating “filter bubbles” of information around certain groups or individuals (Pariser 2011). Here, the capacity of Google’s algorithms to monitor and shape flows of information, people, capital, and goods should be addressed from a spatial perspective.

The emergence of volunteered geographic information (edits to open maps or encyclopaedias) has provided a useful subject for such enquiry, since it is often said to represent a more democratic and participatory form of abstract space (Goodchild 2007; Google 2015a:4). However, its inclusion within Google’s index (facilitated by a growing adoption of semantic web technologies)⁷ has demonstrated that Google’s representation of contested places such as Jerusalem is far from transparent (which Google’s infobox presently declares “The Capital of Israel”, despite a lack of such recognition from the international community). In similar cases, Google often outputs geographic information that displays a loss of nuance, an obscured provenance, hidden personal filtering, and an increasingly complex technical operation behind the process of trying to contest, update or otherwise modify the information itself (Ford and Graham 2016a, 2016b). This raises two significant concerns for the right to the city.

First, Google’s centralized ranking of information in a networked context demonstrates the highly complex and immutable nature of this abstract urban space. This privileges the voices of some much more than others (a digital “tyranny of the majority”). Hence, whereas Google’s technology may reinforce existing orders and inequalities in some cases, in others it may also reconfigure and restructure social relations, allowing new informational elites to dominate others in the production of space (Graham et al. 2013). Those “informational” classes of society can thus better promote their own vision of place over the less technically equipped (Castells 2010; Zukin et al. 2015). So whilst an increasing proportion of the urban subaltern may have access to digital communications devices, their ability to challenge or disagree with this process (producing space through digital information) is increasingly limited. Therefore, the power of Google’s algorithms and databases—like many others—is leaving its own particular mark of spatial-informational injustice on history.

Second, and by extension, this filtering of material-social space will alter its potential for “political import” (Dikeç 2012). This is because such a material manifestation of either “Googlearchy” or filter bubbles will reconfigure and nullify spatial politics as something which relies on encounters, possibilities, and ruptures between different groups and individuals (e.g. Rancière 1998): “In order for space to have political import, it has to be associated in some way with change in the established order of things, leading to new distributions, relations, connections and disconnections” (Dikeç 2012:675). For Lefebvre this is described in a similar manner—and the possibility of encounters between diverse groups and individuals is itself a pathway to a right to the city, not to mention one of the great attractions of city life itself (Jacobs 1961; Merrifield 2012). Such a power to nullify dissensus exemplifies Lefebvre’s theses surrounding the homogenizing tendencies of abstract space and the reductive nature of digital information (Lefebvre 1991:287, 2003:59, 2014:811)—albeit both combined in a powerful new technology. Just as TripAdvisor or Yelp might have

become a tyranny for the world of restaurateurs,⁸ the “neutral” and “objective” algorithms of Google Maps may become a hegemonic order of consensus for the broader urban population, spelling a death-knell for the enunciation of dissent.

The regulatory processes behind Google—including algorithms, code and systems of data governance—now take a role in the spatial processes of urban politics. They may privilege the spatial projects of some subjects or groups, and also play a role in the foreclosing of political dissent for others. In this manner, the increasingly opaque and complex nature of these algorithms might be said to represent an ideological structure of power which is capable of producing space in much the same way that other regimes of regulatory power can (Mager 2014; Ruppert 2013). Hence, the ability or disability to action change within the representational regime of Google becomes an ability or disability to engage in the production of urban space itself. And, the opportunity for dissent becomes crucial for urban equality in respect of the dominant informational representations of place. Therefore, because urban space is increasingly defined by Google’s regime of information mediation, *an informational right to the city depends upon the ability to enunciate dissent within this regime.*

Google—In Whose Interests Do You Exercise Your Power?

Lefebvre was optimistic that technology could improve everyday life in urban society. But he was also concerned by how powerful actors might control the discourse around any such potential in order to “mask other, less obvious motives” (Lefebvre 2003:143). In this case, Google is an information broker and advertising company with a \$66 billion annual turnover in 2014. Their immediate and irrefutable interests concern profits, growth, and a return on investment for shareholders. Understanding how such interests are masked by other factors is necessary both to understand Google’s strategy as a profit-driven multinational and in order to develop a counter-strategy (Lefebvre 2003:144). First, as part of a broader infrastructure, the seemingly benign spatial representations provided by their service may be politically overlooked due to the gradual banalization of their delivery through desktop computers, tablets or smart phones. All of which are commodified points-of-service where mediating technology disappears beneath clean white interfaces, communicates with mobile phone masts disguised as trees, or travels through cables buried deep beneath the road (Crang and Graham 2007; Kaika and Swyngedouw 2000). Just as water emerges from the tap (via dams, reservoirs and monitoring systems), the processes and operations enabled by Google mask an enormous process of operations and social relations from the gaze of the regular user. Therefore, geospatial information is being produced and exchanged as a commodity, and important and banal questions remain: “Who produces information? How? For whom? And who consumes it?” (Lefebvre 2014:813–816).

Second, such interests are also socially obscured when the use-values of ICTs are fetishized in a manner that obscures the underlying exchange interest (Fuchs 2016). This is particularly apparent in the persistent hailing of Google, Silicon Valley, and ICTs in general as forces which offer endless forms of technological emancipation

(Morozov 2013). In this respect, Lefebvre's cybernetic technocrats are still here, but their methods and computers are faster, cooler, and more convincing. Despite the failure of similar promises in the past (Graham et al. 2015a), these visions persist through grand claims that include the "death of distance" (Cairncross 1997), a "flattened world" (Friedman 2007), the persistent hailing of the end of geography and its "laws" (Gillespie and Williams 1988; Kello 2013:23), and the immanence of cyberspace. The new media phenomena associated with Google have thus often been cast as a "dazzling light ... shining above everyday concerns" (Haythornthwaite quoted in Graham 2004), rather than merely as information somehow embedded in banal everyday practices. Elevating Google in a similar manner—as beyond its base in everyday life—can be read in the context of Lefebvre's early analysis on "information ideology" (Lefebvre 2014:818). This ideology draws critical attention away from what have always remained questions of everyday life, commodities, production and consumption.

A third masking of this commodity interest is the form of the exchange itself: the free provision of Google's services is exemplary of the service-for-profile exchange, whereby an individual might freely use services in exchange for Google's right to use their profile data for a range of purposes not limited to advertising (this may include anything from a user's current location to the content of communication never intended for transmission: what you thought and where you thought it). This is prototypical of the adage "if you're not the customer then you're the product", where Google is a highly profitable "database of intentions" within which "we search for things we are hoping to know, hoping to do, and hoping to become" (Halavais 2009:147). This positions the corporation at the top of a \$130 billion Internet advertising arena, and emphasizes their interest in the detailed but relatively risk-free capture of social processes and lived space, in order to profit as an intermediary between production and consumption (Lefebvre 2003:101). For example, when combined with powerful geospatial information on individual users, such information can be used to create new and profitable advertising products like "radius bidding"—where advertising strategies can be based upon a synthesis between an individual's profile data and exact real-time location (Google 2014). As the corporation becomes better at producing such accumulated knowledge (Lefebvre 1991:137), Lefebvre has already argued that such abstract space will be increasingly re-integrated into social practice and material production, resulting in an increasingly commodified urban space and an economy that valorizes certain relationships along the exact same lines (Lefebvre 1991:56): "How many reviews does it have? ... It's *not* on Google?!"

Unmasking these commodity interests of Google is one step, but contextualizing them within broader critical theories is another. Lefebvre's critique of information ideology situates the information commodity interest within an account of advancements in cybernetics aiming towards "a perfect market society ... and a fully planned society, in which the centre would receive from each unit at the base correct messages concerning its order of preferences and would have the same structure and the same attitude ... information and participation advance together" (Nora and Minc 1978:136).⁹ In the recent development of Google's Soli Chip (a hand gesture recognition technology), the interest of collecting increasingly

detailed and granular data on human interactions is plainly visible: “We are actually interpreting human intent” from a microchip using radar technology to capture the “possibilities of the human hand ... the finesse of human actions” (Google 2015b). To infer that this increasingly abstract capture of everyday human social interaction (the *gestures* of Lefebvre’s “lived” space) can lead to a technological urban emancipation is to submit to the fantasy that the use-value of Google’s services somehow outweighs their \$66 billion commodity interest. Therefore, *an informational right to the city depends upon an ability to transcend these fantasies*.

Google—To Whom Are You Accountable?

Through his discussion of the Nora-Minc Report and abstract space as a political tool instituted by the state (Lefebvre 1991:285, 2014:810), Lefebvre’s focus on the state’s power over information seems outdated in the case of Google. Despite some debate surrounding the operations of search engines and web services at the state level (for example, the EU-wide “right to be forgotten”), socio-technical power is surprisingly absent from many policy debates—resulting in relatively little transparent accountability for large technology firms such as Google. This is brought about by two broad factors, each of importance to any claim on the right to the city.

First, the historical development and provision of Internet infrastructure differs from traditional models of infrastructure development due to its relatively more total (rather than partial) privatization and deregulation (Tranos 2013:55). This is also evident in the evolution of theoretical discourses around ICTs that have shifted from Bell’s Keynesian concern with ameliorating the effects of capitalism, to talk of flexible market regulation and a prioritization for the technological ingenuity and innovation of forces like Silicon Valley (Ampuja and Koivisto 2014). The practical manifestation of a more total privatization has resulted in a more uneven distribution of Internet infrastructure compared with other services (like roads or running water). For example, research in poorer urban areas has concluded that the deregulation of telecommunications in the United States and consequent market failure is to blame for inadequate Internet provision (Byrum and Breitbart 2013).

However, a second aspect to Google’s accountability is more complex: to what extent is Google directly accountable to the user? Whilst the typical Internet user has supposedly transformed from consumer to “prosumer” of information (Fuchs 2014), so has search become a system that constantly re-evaluates its own operations based upon user-feedback.¹⁰ This frames users’ actions as ones which might themselves constitute both the search organization and non-human algorithmic “compactants” as powerful (Berry 2014:69). As a collective, users then become a significantly culpable audience who reproduce and enact the lived ideology of informational capitalism with each click: “The ideological superstructure and the economic base meet with, and feed, each other in every singly Google query”, and so “consent is reached by way of creating win-win situations that make individuals play by the rules of capitalism” (Mager 2014:32).

Assessing accountability for power in this networked context seems difficult for Lefebvre. If the use of Google is a “decision for those at the base” (in everyday life)

(Lefebvre 2014:824), then why does it seem like there is such little opportunity for actions of resistance? We suggest that a better account of Google's power instead focuses on a situation whereby control is achieved precisely through such possible individual actions: Google's power draws on a self-governance where individual autonomy and action is what lies at the heart of disciplinary control (Barnett et al. 2008; McNay 2009:56). "Openness", "democracy", "user-feedback" and "participation" are all part of the mode of governance for informational capitalism—it is precisely the invitation to behave as an individual that reproduces the power in the hands of an elite (Žižek 2010). Hence, whilst Lefebvre's broader theory on urbanization and the production of space works well in the context of digital technology, his discussion of power in these processes nevertheless may need re-thinking. His particular focus on the abstract space of Soviet planned cities typifies this (Lefebvre 2003)—the reproduction of power no longer stems from a locatable top-down source, but from distributed actions that form a "bottom-up navigation of places" (Evans 2015).

Theorists of informational gatekeepers would do well to remember that just as city state gates were usually open to all (except in times of war, and in order to tax, control, and ultimately reproduce a society of sovereignty), Google must also remain open to all in order to maintain its strategy of neutrality and utility. Google's invitation to search—and even to look for or express opinions of dissent—is precisely what constitutes it as both powerful and profitable. Google requires and values authenticity in intentions and actions above all else.¹¹ And, it is a new form of everyday habitus that reproduces this power and the informational economy: cultural control mechanisms like the Chapels of 16th century city gates (for example, Porta San Gennaro in Naples) have become the Google Doodles and Rainbow Filters of today; inculcating new forms of subjectivity within an informational regime of power that is dependent upon the quantifiable actions of the individual.¹² So whilst the state might yet service many of Google's demands (Lefebvre 2009:120), it is the user who must be confronted as inscribing the gatekeeper within the real through each quantifiable act. And so the correct manner in which to dismantle such power must be through a refusal to act (Žižek 2006:381).¹³ To reject the call to perform as an informational commodity prosumer; to refute the suggestion that to save everything one can "click here!" (Morozov 2013); to offer an abstract negation that doesn't already fit into a binary computation (Tiqqun 2001); to think twice; and, to not behave as Google wants or expects. Therefore, *an informational right to the city depends upon a refusal to act.*

Google—How Do We Get Rid Of You?

The political utility of a concept is not just in providing better understanding of reality, it also needs to enable an experimentation with reality that reveals new possibilities and openings (Merrifield 2011). In this respect, the original right to the city has been misunderstood as an impotent and post-political directive that does not require that we get rid of the city of actors like Google, and that they can still somehow "improve life in cities for everyone" (Google Sidewalk Labs 2016; Souza 2010). Therefore, the core of this paper has sought to outline three principles of

properly political action to inform Benn's ultimate question. To rid the city of Google one must somehow enunciate a disagreement with the status quo, traverse the fantasies of the ICT elites, and yet also refuse to act as expected within any established space for performative placebo-politics (Swyngedouw 2011). With these principles in mind, this section offers a strategy to "escape the quantifiable" and to discover an ICT-based "path to the possible" (Lefebvre 2003:185, 6): working for a Google-free city.

To understand why these principles are important, it is useful to start by considering what sorts of actions might actually fail to deliver greater equality. In particular, many initiatives surrounding informational inequalities often concern themselves with restoring greater equality through access across a "digital divide" (Hilbert 2011). Entire continents have been promised sudden growth based on the arrival of a few new submarine cables or laptops. These projects would seem consistent with Lefebvre's original call for a right to information. But such access is not really a principle that challenges the interests of large corporations like Google, who depend on mantra such as "The More We Connect The Better It Gets".¹⁴ Google's recent entry to the Internet service provider market in both the global North and South is indicative of a strategy to connect as many individuals as possible to its services. And, amidst this prospecting, "Project Loon" (Google's plan to use high-altitude balloons to connect the world's billions of currently disconnected people) appears as little more than a spatial fix to a requirement for an ever-expanding user base and data resource to sort and mine (Andrejevic 2014:1686), or perhaps, a new market-practice of "data colonialism" (Thatcher et al. 2016). So without rubbishing genuine or revolutionary attempts to bring information to those lacking, initiatives and actions that frame information access as an intrinsic good always require critical attention: justice in informational distribution is not automatically "the ideal order" in the face of injustice (Badiou quoted in Dikeç 2002:96), and an informational right to the city should not simply appear as a tamed form of informational capitalism.

Therefore, Lefebvre's calls for a right to information, access or participation are problematized by the nature of ICTs—connective technologies that seem to offer some form of use value, but ultimately fixate on the commodification and simulation of social relations. It would seem that the technology needs first to be re-appropriated (Elden 2004:152). In order to do so, there are a range of smaller initiatives that might be said to better represent the type of resistance, disagreement and refusal we seek, and even a spontaneity that Lefebvre himself might have advocated. This might include tools which enable a user to destroy their own profile data or archived communications, devalue their digital labour, or to act in a manner that rejects notions of a digitally quantified and commodified self or space.

Examples of such acts might include the "Web 2.0 Suicide Machine",¹⁵ or perhaps fabricating several hundred non-existent artisanal cup-cake bakeries in the South Bronx on Google Maps, alongside their fantastically gushing reviews on Yelp. Either act might demonstrate the manner in which digital tools can be mischievously inverted to disrupt or disagree with the 'ideo-logic' of abstract substitution or visualization (Lefebvre 2003:183). And, this demonstrates that the same open and non-linear systems which created Google can still provide the potential for a

politics of flux and vitality (Lash 2005). Pursued collectively—for example, through organizations like Anonymous—this demonstrates “the importance of art, expression, autonomy, and creation through unalienated labour” (Coleman 2014:270). Therefore, such re-appropriation of Google’s abstract space can play a *part* in an informational right to the city, since it is an expression and practice of urban citizenship that can articulate, claim and renew group rights within and through the informational appropriation of city spaces.

However, these “micro-political” acts are not all that is required, since they remain focused on a profoundly simulated reality and do not seem to develop fully towards a sustainable notion of urban society. First, we cannot all join with Anonymous on the 4chan forum (because we are all “*newfags*”), and second, these actions often have little more political motivation than “*for the lulz*” (laughter at someone else’s expense—where decisions as to *whose* expense are often just as opaque or arbitrary as Google’s algorithms). This risks committing little more than appropriation for appropriation’s sake, and would arguably produce a city that is ultimately no more egalitarian than the city of Google—one where all sorts of “*moralfaggotry*” would be unwelcome (Coleman 2014:62). In sum, the de-centred approach of Anonymous might be capable of heroically matching Google’s de-centred power over a wealth of abstract information (and in all sorts of other extremely useful political acts), but to what possible urban life does it ultimately guide us? This is where Lefebvre’s questions of how we might begin to replace “habitat” with “habiting” arises: How do we replace the ideology of habitat (“*Your data-driven life online!*”) with a practice of actually living with the digital information we produce and the tools we produce it with? How do we simultaneously invoke life and lived space through digital technology, yet simultaneously avoid an informational quantification and exploitation at the mercy of one-Google-after-another? How do we *dwell* within the digitally augmented city, *despite* Google and *despite* Anonymous?

Beyond such isolated instances of re-appropriation and participation, Lefebvre also focused on a sustained practice of *autogestion* (Lefebvre 2003:150)—the self-management of technologies, resources and surplus. To this end, there has been a resurgence in reference to the value of commons-based digital platforms or “working class ICTs” (Fuchs 2014). Such ideas have helped re-contextualize ICTs within a class struggle that is yet to be rendered obsolete by the grand promises of these technologies (Dyer-Witheford 2015:9). And deploying such traditional systems in a new setting—for example, in Uber driver unions or municipal Airbnb co-ops (Schneider 2015)—might help re-imagine Google’s functions as a collectively owned and operated technology for the good of the city, perhaps answering the question: “The battle lines are clear, the question is only whether all this stuff can be somehow used in an emancipatory way?” (Morozov 2015). Therefore, commons-based platforms like Wikipedia still merit attention as relatively open mechanisms for encouraging a broad-base of participation in the creation of a diverse range of geographic information. They release all core platform data freely to the public, and have transparent mechanisms for resolving conflicts about how places, people, and processes should be represented. This is in line with Mason’s (2015) vision of post-capitalist economies in which collaborative forms of work are promoted

over rent-seeking ones. Perhaps a commons-based spatial search should operate in a similar fashion? More *autogestion*, less *autosuggestion*!

However, beyond the institutional challenges facing such commons (Ostrom 1990)—revisited today through the many practical, political or ethical issues around platforms like OpenStreetMap (Haklay 2010; McConchie 2015)—we suggest that moving beyond the advocacy of commons-based ICT platforms as a panacea is important. After all, the notion that one platform should also “Organise all the world’s information” (Google) or be the “Sum of all human knowledge” (Wikipedia)—or somehow otherwise cover all abstract space—is itself a notion that shares much with the information ideology. In terms of the three principles, it is not an ultimate disagreement. Because of this, commons ICTs as we know them *might* embody an informational right to the city, but they would do well to focus on a notion of power that Lefebvre seemed not to grasp so well: a notion of power in the city as generally concerned with “circulatory control” (Foucault quoted in Luque-Ayala and Marvin 2016), which includes the circulation and urbanization of digital information through Google.

Understanding Google’s power in this way suggests that such “commoning” strategies might be more achievable and effective if they focus such autogestion at smaller, more tangible points and densities of lived space and human relations. Or, if they try and improve life for a pre-existing community or cluster of relations instead of simulating a global one that does not yet exist. One recent example of this is “Dewey Maps”: a map being built on top of OpenStreetMap’s platform by and for residents of Brussels, as a tool to “bring together practical information to *live well* locally without breaking the bank”.¹⁶ Its character is simultaneously global commoned-tech and local knowledge combined, necessarily produced through direct lived experience on its own terms. It attempts to solidify an informational-common around a particular place as conceived by its density of relations across all of perceived, lived and abstract space—and it is from this position that a project can best pursue an informational right to the city. Whilst such initiatives might eventually connect up across space (and the protocols of free and open source software platforms will surely help), a vital step is to continually self-manage flows of information as they circulate around more particular points or densities.

Finally, such a notion of “living well” also invokes Lefebvre’s cry for the right to the *oeuvre* (Lefebvre 1996:65): the demand that technologies should be employed as much for human works of joy (*oeuvres*) as for outright profits. Discovering such a deliberated and joyful production of information would undoubtedly require *work*, but some contend that a less-alienated informational experience of the city is ultimately the better one (Purcell 2017). Or, that the mountaineer’s slow but self-mastered ascent is a worthy pursuit in light of the predetermined speed of the ski-lift rider (Lefebvre quoted in Elden 2004:133). To this end, and beyond the hip cycle cafés and squats charted in Dewey Maps, other worthwhile productions of informational *oeuvres* can be found elsewhere in “sousveillance” or “Citizen Science” projects that address an array of social, political and environmental concerns (e.g. Public Lab, SPLASH, the Air Quality Egg) (Cohn 2008; Mann et al. 2002). Where Wikipedia might be criticized for its growing professionalism, many of these smaller projects invite the powerful enjoyment of the amateur (Merrifield 2015). And, such triumphs might also arrive in the success of smaller, more locally embedded businesses like

Carteiro Amigo (“Friendly Mailman”), a novel and much-needed addressing system and postal service in Rocinha, a Rio favela: “Google came by here last month. They asked if they could take a photo of our map. I said: ‘No way.’ Let them do their own” (Mier 2014). Such local initiatives demonstrate that not everyone is yet willing to be another passive user in the battle to control the legibility of the city—some are still enjoying the fight. In each case, the autogestion of urban information has been realized as a worthwhile activity which can contribute to a never-ending struggle towards greater empowerment and democracy for all urban citizens.

In this light, it should be considered that the early days of the Internet were almost everywhere an *oeuvre* (dominated by skilled, empowered, fun-loving and explorative community of creative amateurs and geeks) compared with today’s electronic drudgery (dominated by rules and IT professionals; populated by individuals who are largely un-skilled and dis-empowered; often experienced as a boring necessity that is nevertheless constantly advertised as exhilarating—if only we believe the latest superfast broadband adverts!). Similarly, the problem is that our city’s information and abstract space is being managed for us as a part of someone else’s *oeuvre*: an *oeuvre* of the venture capitalist, the bureaucrat or the techno-evangelist. And often, as an *oeuvre* that belongs to Google.

Therefore, an informational right to the city must employ all of the above—re-appropriation and participation as part of a sustained autogestion—as well as to behold and recover the digital *oeuvre* as a worthwhile pursuit. We must actively enjoy the practice of producing and managing our urban information. It is not enough to expect Google to provide you with a joy of your own.

Conclusion

The concept of an informational right to the city is useful in understanding the power of an informational monopoly like Google. Their control over a newly ubiquitous form of digital abstract space enables them to reproduce and control urban space itself. In this capacity, they have now joined—and in some cases, perhaps even superseded—the ranks of urban planners, developers and landlords from Lefebvre’s era in terms of their power over the city and its many problems. Similarly, this power is also masked by a newly dominant ideology of Google as technology serving the “general interest” of the city (Lefebvre 2014:253): we can “spread the love” if we “put our cities on the map!” (Google 2016). As such forces begin to re-shape the city, their power and ideology merits critical attention through the lens of Lefebvre, and his theory on the production of space provides a strong starting point.

However, the dependence of these new technologies of abstract space upon vast flows of digital information also demonstrates that Lefebvre’s original separation of a right to information and a right to the city is problematic. Concatenating the two has helped us to re-think both the relationship of information to a right to the city, and the way that such technology complicates and challenges Lefebvre’s original thesis on urbanization, power and space. Through innovative information technologies, Google can control urban centralities and political representations, homogenize urban space, embed abstract advertising products in material space, prioritize and valorize some (digital) relations over others, harness surplus production

through technological innovation, and dominate the digital process of reducing concrete social practice to abstract information. Yet, we live in a world where even the poorest can now possess a Google-ready smartphone: what role will these passive users and information producers take in the urbanization of information, and will they “Google” Lefebvre?

In trying to capture an appropriately political understanding of what an informational right to the city might entail, this examination of Google’s power has directed attention to three guiding principles in seeking a path towards more equitable flows of urban information. These principles roughly translate as requiring a critical disagreement with the current arrangement and configuration of technologies of spatial representation, and have been adopted from broader work on the “post-political” city. This discussion has suggested that the notion of commons-based ICTs is of particular use to such an endeavour, yet there remain both old and new possibilities and challenges alike. To this end, Lefebvre’s notions of *autogestion* and the *oeuvre* remain useful concepts. An informational right to the city requires that we realize its importance and begin to act now in a deliberate project to re-appropriate and self-manage the information that we produce in a manner that we can both enjoy and can sustain.

Finally, as organizations like Google continue to profit and prospect upon the expanding quantification of human social phenomena, Lefebvre’s theory has already argued that spatial consequences will come to reflect economies that drive this quantification: uneven information-based geographies and economies. Therefore, as ever more people live in digital, digitally mediated, and digitally augmented places, further developing the concept of an informational right to the city is imperative in order to understand exactly how power is reproduced through code, content, control and the urbanization of information.

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Endnotes

¹ Despite server farms in mid-western US deserts or Scandinavian tundra (where technology is perhaps encountered more as a “rocket or a radar station” than as an urban environment; Lefebvre quoted in Elden 2004:133), major Internet infrastructure is usually still broadly aligned with traditional urban cores (Tranos 2013). This observation is not intended to challenge the planetary urbanization thesis, it is merely to say that the city is still a primary object of importance and innovation with regards to ICTs and power (see also Luque-Ayala and Marvin 2016).

² Tony Benn famously posed these five questions during his final speech as a Member of Parliament in 2001. As part of a broader refrain on democracy—and the importance of people’s active engagement with politics—he emphasized that the final question was of the utmost significance. Since, if you cannot get rid of the people who govern you—including powerful unelected entities—then you do not live in a democratic political system.

³ Henri Lefebvre died just 38 days before the creation of the world’s first web page in August 1991.

⁴ Urban centrality is a key concept for Lefebvre (2003), and seemingly suggests access and participation to/within the city's core(s) and central resources. However, Andy Merrifield (2011) argues that it is also an existential notion as well as a geographical one. This seems to represent another instance where Lefebvre's more singular notion of power struggles with contemporary urbanization; and we suggest that Google's power is very much a phenomenon that renders Lefebvre's account of power somewhat archaic.

⁵ The term "blockbusting" refers to the surreptitious practices of US real estate agents in the mid-20th century which includes a range of tactics to encourage fearful white residents/families to sell their homes quickly for a low price, and then sell them on to black residents/families at a profit (Hirsch 2015). For example, through leaflet distribution, false greeting letters from "new" black neighbours, using white "proxy buyers", or the hiring of agent provocateurs from racial minorities.

⁶ There are examples of this occurring in which businesses have pursued legal action, see e.g. Poulsen (2014).

⁷ This term refers to the interlinking of data in a standardized structure that is intended to benefit general users through the greater enabling of sharing data across platforms.

⁸ Not only might TripAdvisor make-or-break small hospitality businesses, but the bimodal tendency of such review systems to award a place either one or five stars is in itself a tyranny that naturally reduces nuances and complexities of value to simple pass/fail outcomes (Shaw 2015). The Internet does not produce many three-stars-out-of-five reviews.

⁹ A similar but more radical critique of this ideology was developed by Tiqqun (2001) in the name of "The Cybernetic Hypothesis". This critique builds partly upon Deleuze's (1992) notion of "control societies" and considers organizations like Google as part of a "gigantic abstract machine" in pursuit of a broader political project that seeks to "combine all of discipline, biopolitics, police and advertising".

¹⁰ A similar transformation has occurred in the case of digital maps and the geoweb, where there has been a transformation from a top-down "representation of location" to a bottom-up "navigation of places" or "net localities" (Evans 2015; Gordon and de Souza e Silva 2011).

¹¹ Google is perhaps the ultimate example of what Andrés Luque-Ayala and Simon Marvin (2016) call an "infrastructural journalist of the everyday".

¹² Google's regular front-page "Doodle" has the power to represent a particular political worldview of what's important to billions of users. The celebration of certain national holidays, memorial days or individuals over others is powerfully representative of a liberal Western worldview—a cursory gaze over the list of names reveals Charles Darwin and Nikola Tesla, but no Saints or religious figures, and numerous 20th century artists, but almost no recent politicians except for Nelson Mandela. Facebook's rainbow filter—a device whereby the user can apply a symbolic gay rights "rainbow" flag over their profile picture—marks something of a similar device, albeit one which can feed back profile information on who chooses to apply it to Facebook, as a sort of "control mechanism" (Deleuze 1992:4). In appealing to a type of liberal identity-based post-politics (Žižek 2004, 2006:379), it is strongly suggested that they fail miserably in fostering political actions, since political emancipation never takes the form of a simple identity assertion (like applying a Rainbow filter)—it requires an active association with a broader constituency (Rancière 2001).

¹³ In the writings of Slavoj Žižek, Tiqqun and Erik Swyngedouw, this refusal is illustrated through the example of Herman Melville's character Bartleby, a scrivener working for a Manhattan lawyer who suddenly becomes obstinately uncooperative and responds to his employer's requests only with the words "I would prefer not to".

¹⁴ <https://internet.org/>

¹⁵ <http://suicidemachine.org/>

¹⁶ <http://maps.dewey.be/>

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