

The urban myths of open data

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Abstract. This article discusses the mythologization of open data and data transparency. It argues that openness largely stands unquestioned, as an idealized, and instrumentalized design mode. Introducing a more diverse understanding of openness and transparency, the article draws lines between architectural planning and studies of software. Further, it discusses the embedded logic of data, and potential ways of challenging this. This implies a focus on ‘expressive data’ rather than ‘open data’ or ‘data transparency’

Keywords: interface criticism; software studies; software cultures; software art; net art; open data; transparency.

I. PANORAMIC AND OTHER URBAN MYTHS

The formation of cities is intrinsically connected to the developments of media technologies. For instance, the 19th century panorama – a building sized 360 degrees painting of cities or historical events – appeared in the midst of a period of heavy urbanization, where the city became increasingly obsolete. The panorama was an architectural construction that created an illusion of (a lost) overview, but its spectacular nature also became part of the city as a designed media-saturated experiences. In 1914 at Potsdamer Platz in Berlin *Haus Vaterland* offered a western saloon, a Turkish coffee house, and a Rhine terrace with artificial thunder. [1] Also today, the Sony Centre and other buildings contribute to the panoramic spectacle at Potsdamer Platz.

Berlin, and Hausmann’s Paris even more so, with their ‘grand manner’ style (that originates in the 17th century), were examples of an idealised urbanity: a tailored, totalitarian and organized city that was able to control the spreading of diseases as well as public revolts, and which was later idealised by Stalinists, Nazis and fascists alike. [2], [3] At a human scale, the grand manner style involved the framing of impressive (and imposing) perspectives of the cityscape to the individual, but it was also followed by the construction of miniature landscapes that were manageable at an individual level – such as the panorama, but also arcades, and even zoos. Here, the spectator was the centre of attention and the spectacle compensated for the 19th century city that sought to exceed its own limits through grandiosity and growth. The panorama replaced the central perspective of the grand manner style, the

city as a piece of art, with horizontal lines that allowed for a human scale perspective of the masses. [4]

The history of the panorama demonstrates how cities are mythical constructions; in this case a mythical construction of overview. It also reminds us that in the construction of such myths, the relation between urbanity and media technologies plays a historical role. This is a helpful insight in developing an understanding of how seemingly new phenomena (such as the networked computer, the smart phone, the hidden data underneath, etc.) interact with our urban environment. Smartness, and not least the myths of the city as a transparent and open source system, is intrinsically related to technological constructions that exercise a form of control. Hence, when we today discuss ‘new media cities’, we must realize that the relation is not just a question of remediating panoramas or other electrical spectacles through media facades, urban screens or smart phones, but also one of governance made visible in and through the work of bureaucrats who plan the cities (including information systems for traffic control, logistics, and other aspects of planning and administration [5]). ‘Data transparency’, and ‘open data’, which is the centre of attention for this article, must be seen in the light of these less visible registers – how opening up the administrative data to the public is a form of governance, hence also a closure, that often stands unchallenged exactly because it is ‘open by nature’; or a mythical construction. Like many other closures in planning and governance, it is met by desires to add human scale.

The central claim of this article is that we construct our cities as myths – or as idealized forms; and that also ‘openness’ and ‘data transparency’ is a myth. Roland Barthes famously described myths as ‘second-order’ signs, or signs with an air of absolute meaning around them. [6] Making these signs readable exposes them as heavily ideological linguistic acts that enable particular policies (the flag may for instance enable the policy of the nation state). Hence, also smartness and openness enable the policies of smartness and openness, and must be read accordingly. This does not mean that the open city, the smart city, or the spectacular city for that matter, do not exist, but merely that they are rhetorical constructs that shape our reality – making it spectacular, smart, open, etc.

I intend to demonstrate this through drawing historical lines between openness in urban design and activism, and in software design and activism.

Firstly, the current invigoration of cities as open systems resonate other open projects within governance; and is directly associable to the open source movement, and a software culture that draws distinct lines between different types of openness – expressed in the opposition between the moral/political free/libre software movement and the open source software initiatives, that build on neo liberal notions of open societies.

Secondly, the history of open system design hides an often forgotten historical origin in urban design. This history is helpful in developing an understanding of the role of open data in urban development. Open data initiatives are directly related to open source initiatives, and seemingly highlight a self-fulfilling prophecy of attending both the social and the entrepreneurial registers of the city as an open system.

Finally, this encourages a reflection on the nature of data (open or closed) that supports this prophecy. Datafied realities hold an immanent truth about all aspects of our world, and should not be criticized for being closed, but for their incapability of being ‘free’; meaning having human scale, or being what I label ‘expressive data’, as found in numerous examples from the contemporary software and net art scene.

II. THE CITY AS AN OPEN SYSTEM

Openness is central part of urbanism. In claim for ‘the city as an open system’, Richard Sennett has reinvigorated his (and many other urban theorists, activists and architects) mentor, Jane Jacobs. The link between open systems and Jacobs is logical. Her critique of the urban renewal projects of the fifties and sixties was fierce – both theoretically, and as an urban activist. In her perspective, imagined idealized cities for idealized life forms, such as Le Corbusier’s *Ville Radieuse*, which formed the basis of urban renewal projects and their brutalism, favoured homogeneity, determination, and predictability, and tried to reflect this in their formal expressions of planning and architecture. Little did the urban planners and architects understand the quirkiness of cities that appears, once it is freed from the closed visions of having to control all elements of the system, through regulation – which in Sennett’s perspective is also reflected in modern city planning’s desire to maintain the social or historical ‘context’ of a urban environments, and regulate anything that “sticks out, offends, or challenges.” [7] For Jacobs as well as Sennett, this includes ad-hoc adaptations and additions to buildings, and a diverse use of public space (having shops, garages, healthcare, etc. in the same neighbourhoods).

Though Jacob’s ideal city is essentially an open city, Sennett also detects “glints of something lurking beneath” the stark contrast Jacobs draws between the homogeneity of closed systems on the one side, and the diversity of open systems on the other. Jacobs is an “anarchist of a peculiar sort,” a much more conservative

anarchist. [6] Jacobs believes in the mutation and chance-variation of visual forms. It is the urban cultures that have ‘taken root’ that are agile and able to produce and absorb chance and change: “It is why Naples, Cairo, or New Yorks lower East Side, though resource poor, still ‘work’ in the sense that people care deeply about them.” [7] The main objective of Sennett’s article is to speculate on how architects can design cities that are open for this process of ‘taking root’, of allowing an experience of time that enables citizens to handle mutations and chance variation, which is also a physical experience of democracy and participation.

Apart from his conception of openness (that differs from current notions of data transparency, which I will later return to) what intrigues me is the potential formal instrumentalization of openness – the vision of a potential design that supports the design of open systems. ‘Instrumentalization’, that also often involves a technical element, is in itself opposed to openness. Jacobs herself, in the final chapter of her book *The Death and Life of Great American Cities*, points to how developments in science have influenced urban planning. [9] Hence, she establishes a direct link between instrumentalization and the closed form of an idealized city. The prime example of this is of course statistics as a conveyer of urban renewal that builds on a statistical worldview. Statistics offered ways of controlling complexity. In the fifties, cities were mapped according to statistics on child mortality, employment, crime, etc. Based on this, urban planners reorganized (and demolished) the city into uniform office, shopping, and residential areas. In this sense, statistics as an instrument is part of the mythical construction of the ‘renewed’ city, a form that contains the absolute truth of what a city is. Any instrumentalization implies such logics. What kinds of mythologies does instrumentalized openness imply in a city?

III. SOFTWARE AS AN OPEN SYSTEM

Openness is also a myth of political thought, and intrinsically linked to liberalist oppositions to social and economic engineering. [8] Sennett, however, is well aware that the opposite of the ideal constructs, the “Brittle Cities” as he calls them, is not the free market forces of neo liberalism. Neo-liberalism merely speaks the language of freedom “whilst manipulating closed bureaucratic systems for private gain.” [7] Consequently, he argues for an alternative way, a different social system with a different kind of openness than the private enterprise – through passage territories, incomplete forms and urban narratives.

Hence, judging from Sennett, it seems as if there are two competing formal versions of openness. The one that is open to competition, and the one that is socially open. The first associated with a combination of neo-liberalism/market forces and an irrational desire to control the context; the second with social forces, and a belief in the rooted community’s own ability to handle change. This opposition bears resemblance to discussions within free and open software systems – and perhaps Sennett’s article (from 2006) must even be seen

in the light of open system design's success in the software industries, and its proliferation into other areas.

In a recent study, Nathaniel Tkacz points to how contemporary ideas of openness, transparency, and participation in governance and elsewhere, should be seen in light of the success of open and agile software development. [8] [10] Openness, however, is also one of those terms that are mostly put forward negatively (i.e., 'not closed'), and thus it often avoids any kind of criticism, and has severe conceptual shortcomings. Openness has an imaginary air, and it lends itself easily to visions of societies to come, Tkacz argues. For instance, Michael Hardt and Antonio Negri's use the term "open-source society" – explicitly relating the conception of society to the conception of software – to a coming of a free society (or a democracy of the multitude, in Hardt and Negri's words).

However, rather than using openness to look forward, Tkacz encourages us to look backward into the history of openness, and the ideas of an open society to gain a more critical understanding of openness. More specifically, he reads Karl Popper's critique of Plato, which essentially is a critique of anything closed associated with the formalization of ideas. Popper's work must be seen in light of his exile during the Second World War, and his critique is not only of Plato, but also of communism and fascisms, and their claims to move forward towards a society of perfection – an ideal state for an ideal truth. To quote Tkacz' summary of Popper: "Openness is necessary because nobody can know for certain what the best course for society might be from the outset, and at the same time it is assumed that openness provides the best possible conditions for producing knowledge and, therefore, making better decisions." [8] Absolute truths about social class, race etc. (and implicit economic, racial or other determinism) should never be the outset of a politics.

To Tkacz (and others too), Popper's idealization of openness corresponds well with Friedrich Hayek's promotion of neo-liberalism in the 1940s. The direction of a society is beyond any individual or group's knowledge, and only open competition between ideas and practices will provide the agility that ensures liberty and prevents totalitarianism.

Hayek and Popper's ideas also resonate with a discussion of openness within software culture. Tkacz reminds us that the promotion of openness against proprietary and closed formats follows two competing routes. One being Richard Stallman's ideas of a GNU GPL (GNU General Public License) as a general software license associated with the Free Software Movement – to which all software that includes work issued under the GNU GPL must inherit the same license. The other being Eric Raymond's advocacy for an Open Source Initiative that explicitly saw Stallman's political projects as a hindrance to technical development. This is the difference between 'free' and 'open source' software.

In Christopher Kelty's extensive ethnographical work, he highlights how free software cultures'

obsession with openness in technical infrastructures not only is a question of technical efficiency, but also of moral. In Kelty's terms they represent a recursive publics, where people (much like Sennett's inhabitants of Naples or New York's lower east side) care deeply about the system they inhabit. [11]

As an alternative to the free software movement, the Open Software Initiative sees competition through commodification as a more efficient way of developing software that meets the desires of the users. Licences such as the Mozilla Public License is less strict than the GPL, and allows proprietary modules, though still insisting on the open availability of the source code. This way, the MPL permits the open source community to capitalize their work, and this design for business opportunities ideally better supports future progress. To the Open Source Initiative, commodification is the ideal 'bazaar' of software development, contrary to the 'cathedral' (as Raymond famously entitled his influential text: *The Cathedral and The Bazaar* [12]). Hence, open source is much more aligned with neo-liberal visions of an open society, envisioned by Popper and Hayek.

Tkacz concludes that it in particular is Raymond's more neoliberal and market oriented visions of 'open' systems that has gained influence outside of software culture, and not Stallman's notion of 'free', which is more socially aware, and less focused on capital and personal gain ('free' is also often referred to as 'libre' to highlight this difference)

However, Sennett's perception of a socially rooted openness corresponds better with a 'free' openness, and the kinds of recursive publics, Kelty detects in the free software movement. Sennett in other words favours the passage territories, and the structures that open to internal revision according to a social moral and habitation – in favour of the transparency of glass windows, and replacement by competition that he associates with neo-liberal urban development.

How does open data, and data transparency fit into the city as an open system? Like the re-articulation of openness and transparency in governance and elsewhere, open data expresses a second coming of openness, brought about by software culture's successful invigoration of open access and agile software development. Furthermore, it seemingly automatically appears with no criticism: any open city must have an open data policy. Openness has become an absolute truth, or a myth, that in many ways stand unchallenged. The main question is what kinds of open or free urban space, open data policies support? Is it the glass window or the passage territory that appears, once open data is integrated into an urban design practice?

IV. OPEN DATA FOR OPEN CITIES

A specific example of an open data politics is found in the municipality of Aarhus in Denmark. Aarhus is – like many other mid-sized North European cities – trying to build an identity as a 'smart city' that does not tap into mainstream stereotypes of Song Dong in South Korea. 'Smart Aarhus' is not the idealized version of

smartness in administration, but an idealized version of an open city – a “Scandinavian Third Way” that enforces participation in the struggle to create urban environments that can adapt to changes, and are sustainable socially, economically as well as environmentally. Hence, ‘Smart Aarhus’ associates itself with the collaborative and networked intelligence of people and organizations, and the openness and agility within these networks.

As part of its policy, Smart Aarhus has launched the project ‘Open Data Aarhus’, which provides a number of data sets as a resource for innovation – economic as well as social, educational, cultural, etc. In other words, transparency of the public sector – the data of parking options for trucks, the location of public playgrounds, library services, etc. – is intrinsically linked to strategic decisions for urban development.

As the numerous organizations that identify with ODAA seem to suggest, openness, transparency and participation have become the mantras of not only NGOs and activists but also governance – not only the Danish Cyclists’ Federation, environmentalists, artists and hackers, but also urban planners that seek to promote bicycling (*Aarhus Bicycle city*), monitor the level of pollution (*Open Data on Polluted Soil*), support a diverse cultural underground (*More Creative/Aarhus European Cultural Capital 2017*), or free online access (*Smart Aarhus WIFI*). In the underbelly of digital culture as well as in governance, openness in the technical infrastructures equals sustainability in all practices of life. Is this state of perpetual and agile openness now a formal ideal for everyone? Are there no conflicts anymore?

As Smart Aarhus and Open Data Aarhus demonstrate, openness in reality often works by pragmatism, and strives for the solutions that are least closed. Conflicts in other words, exist in the dichotomy between open and closed. However, Smart Aarhus generally seems to affirm Tkacz’ point: the presented initiatives predominantly support the idea of the bazaar, and of open data as a generator of open source innovation. But the ‘cathedrals and the bazaars’ of the open data city are also diverse, and we need a more nuanced perception of their implied openness.

To begin with, we find a reversal of the history that Tkacz presents. Not only do contemporary pleas for open data and open source software for open cities support the open city; the conception of the open city has also played an important part of the instrumentalization of open system development. The remaining part of this article will present this often forgotten history, and explain how a perspective on the city has affected methods in system development. I will then reflect on the logic of ‘datafication’ and algorithmic realities in relation to this history. Data on a city’s behaviour is envisioned as a working logic that instrumentalizes openness in system design by reflex. Often we see, that open data projects follow the trajectory of open source: openness serves the right to make business out of data, and supports the idea that market competition will lead the way to the best use of

data in system development. However, open data – though in opposition to closed/proprietary data – does not challenge the logic of algorithmic realities itself. Finally, I will briefly suggest that Sennett’s idea of openness as a ‘passage territory’ may open up for alternative perspectives on data, such as ‘expressive data’.

V. PATTERN LANGUAGES FOR OPEN CITIES

Interestingly, Sennett’s plea to formally design an open, democratic urban space has also been heralded by the architect Christopher Alexander. Alexander has played an important historical role in the development and conception of software openness; more specifically he was the prime inspiration for the development of the wiki (which is not only the origin of Wikipedia, Tkacz’s main object of research, but also an intrinsic part of both interface design and open source projects). [13]

Like Sennett, in favour of Jacob’s like ideas of heterogenic and diverse cities that work in a human scale, Alexander (in the 1970s) developed the idea of a “pattern language”, a collection of people’s patterns of behaviours that would form a basis for designing infrastructures. As an example, Alexander uses the pattern ‘accessible green’ based on the observation that people need open green places to go to; but when they are more than three minutes away, the distance overwhelms the need. Consequently, green spaces must be built “within three minutes’ walk [...] of every house and workplace.” This pattern, along with patterns of “dancing in the streets”, or “holy ground” helps fulfil larger patterns such as ‘identifiable neighborhood’. Alexander’s book comprises of 253 patterns in total.

According to Alexander, “towns and buildings will not be able to come alive, unless they are made by all the people in society.” [14] The general idea is that a successful environment depends upon an ability to combine physical and social relationships. The pattern language creates such combinations: it is a lively language, not exclusive to architects, that responds to the needs and desires of the people and thus connects architecture to people. Alexander’s book is a pattern language for towns, buildings and constructions, but this pattern language is only one amongst many. Any society, or even individual, will need a pattern language to combine the physical with the social. However, the problem is that these languages are often not very sophisticated; people are unable to speak. The pattern language, and the book of pattern languages, thus represents the formalization of this linguistic sophistication that affords open systems.

VI. WIKIS AND PATTERN REPOSITORIES FOR OPEN SYSTEMS

Alexander’s ideas have had a tremendous impact on the methods of open software development. In computing, researchers were raising similar critiques of managerial tyrannies of closed system design – in particular in relation to work practices in offices and factories. There was a great need for building systems that reflected the preferred practices and workflows of the users/workers. This is found e.g., in participatory

design, and the work of Kristen Nygaard (the father of object oriented computing), who worked closely with workers' unions in de-alienating computer labour. What Nygaard gained from his co-research with workers was an unexpected insight: programming was not only a way of modelling a labour process, but people in general found a value in describing a program and defining objects, classes and methods. Writing programs may lead to deep insight into a social problem and its solutions.

Following on from Nygaard's developments, Alexander's ideas were directly applicable in participatory design and open object oriented programming. The programmer Ward Cunningham was particularly influenced by Alexander, and initiated the Portland Pattern Repository. In the nineties, the project integrated the WikiWikiWeb, the world's first wiki. Using the schemata of Alexander in general ways, "Ward's wiki" contained patterns that described problems and solutions in graphical user interface design and programming. It became popular because it allowed programmers to share and co-edit their experiences and develop a sophisticated pattern language for the correlation of human use and technical infrastructure.

In participatory and user centered design practices, the Wiki (along with other tools) is an instrumentalized format for openness that ensures the design's adaptation to the user (be it programmer or end user). The wiki is an intrinsic part of open/agile software development where programming practices are documented, shared and negotiated. To Cunningham and his heirs, the end objective is naturally the design, and not the process. They are interested in formalized standards that corresponds to the user's reality. Adapting software interfaces to the patterns of the users (based on experience, user research, and other techniques) has been an important part of the development of interfaces, and it has improved not only the usability of the software, but also our experiences of for its domains.

For instance, in their pioneering work with typographers, participatory designers found that hypertext, software text editors and digital print not only builds on and remediates our prior experiences and cultural practices around text, but also renegotiates their reality. [15] In other words, the nature of print and text and the practices around them also change (this has evidently also been affirmed with the World Wide Web). Likewise, our interfaces to the urban – from the personal path-finder app (Google Map, Trip Advisor, Lonely Planet, etc.), to the administrator's traffic control – not only reflect our practices, but also change them. This has been intensely documented by Martijn de Waal [16], and the strategies of 'black boxing' that exist around these software systems have also been criticized. [17]

VII. FROM PATTERNS TO OPEN DATA

Shifting the attention in design practice from the interaction with people to a processing of the data produced by people marks an important change: it

prevents the kinds of negotiations of reality, Nygaard and Alexander envisioned. Pattern languages now appear by computational reflex.

This is for example evident in Smart Aarhus' use of sensors to control traffic. The company Blip Systems has embedded more than one hundred sensors that gather information from motorists Bluetooth devices (such as in hands-free systems and mobile phones). The system captures anonymous identities (MAC addresses), encrypt them, and time-stamp them. The subsequent analysis of the data is used for instance to identify traffic congestions, evaluate and calibrate traffic signals and generate other information or warnings to city traffic engineers. The system also features ten dynamic signs along the city's busiest roads that feature information such as driving times, alternative routes and weather conditions. To many drivers this is probably extremely useful, but it also bypasses the general discussions of traffic (and weather to favor bicycles, public transportation, pedestrians, or private cars).

What the example further demonstrates is how data transparency can be used as a service. In data analytics, the data itself represents a value: the value of user patterns. This is evidently of value to system administrators, but also often to the consumers (who produce the data). The data provided by citizens is used to calculate behavioral patterns that is of value to system administrators, but also offered as a service to the citizens.

Similar strategies of transparency are also featured in the history of the World Wide Web, where log-file analysis (numbers of views in Twitter, tag clouds on a blog, etc.) that was traditionally only accessible to administrators is increasingly presented as a user feature. [18] Though not yet present in our urban environment, these info-features also represent a business model that enables promotions against payment (both Google and trustpilot.com are examples of this).

Tim O'Reilly perhaps best expresses this successful partnership between private business and public openness. In a discussion on "Open data for open land" he writes: "This policy was based on lessons from previous government open data success stories, such as weather data and GPS, which form the basis for countless commercial services that we take for granted today and that deliver enormous value to society." As an argument he refers to GovLab's Open Data 500 project [19] as an "impressive list of companies reliant on open government data," and how he himself has "been encouraging entrepreneurs to invest their time and ingenuity to explore entrepreneurial opportunities based on government data." [20]

Open data is then not only transparency of numbers and data analytics as a service, but also thrives on the logic that the best services appear via entrepreneurship; and that this entrepreneurship is beneficial for society. Evidently there is some truth in O'Reilly's claim that open data has led to numerous startups that offer data

analytics as user services, via for instance smart phone apps. In relation to Open Data Aarhus, there is also an explicit aim to harness data. The public service Virk (short for business in Danish) offers not only data sets but also courses to entrepreneurs in how to use data, and a showcase of successful applications ('App Market'). [21]

VIII. THE LOGIC OF DATA

I do not seek to contest this neo-liberal perspective on open data politics, nor the usability of these apps; but rather to challenge the inner logics of data (open, or not). Data's claim to truth, an un-ambiguous pattern language, can evidently be questioned. Systems for quantification are faulty in many ways (what does the data set really represent? Does it represent the number of cars, or also cyclists? Does it account for a higher number of devices in some cars rather than others? Or, in the case of the WWW, does the number of views also account for the number of web-crawlers?). As a mythical construction, what is important is however not the falsification of these systems, but how they construct a reality. This reality may be faulty but it is also a construction that actively affects sense making, and the behaviors of people and things.

In cities, data is predominantly seen as an immanent truth about the patterns of the city; and the data analysis provides the basis of a new pattern language. This is an entirely different perception of knowledge than envisioned by for instance Nygaard and Alexander. By turning the world into discrete data, knowledge is not produced about the world anymore – but from the world. According to Antoinette Rouvroy, who is a Doctor of Law at Namur University, it is a kind of knowledge that does not have "any direct contact with the world it is aimed at representing. Rather than its validity, it is of its predictive models, [...] its contribution to the 'fluidification' of economic and social life (and thus of capitalism), its efficiency in sparing human against time and efforts in the interpretation and evaluation of persons and events of the world that characterize the 'intelligence' of 'big data'." [22] Raw data functions as signals that induce reflex responses in computer systems, rather than as signs carrying meanings and requiring interpretation. "Everything goes as if meaning-making was not necessary anymore." [22]

In other words, the arguments for causalities and the inherent negotiation of these arguments that is present in for instance Alexander and Nygaard's work is replaced with a system analysis. Hence, the critical approach we may normally assume to our interfaces – how they represent and negotiate reality – is in a crisis. Reality is turned into signals and analytics automatizes the creation of signs. Data and algorithms entail an immanent truth, as Chris Anderson has quoted Peter Norvig (the research manager at Google): "All models are wrong, and increasingly you can succeed without them." [23] The instrumentalized dream of openness to social behaviors and patterns is benevolent by nature but disarms any negotiation, and even replaces theory and criticism.

What is the openness of data then, other than a glass window into the world of managerial control? What is open access to data sets, other than the right for anyone to apply and harness the logic of data and algorithms?

IX. EXPRESSIVE DATA

Any instrumentalization of openness inherently imply closures. The closures of open data seem particularly dangerous in that they are highly operational, but potentially rule out any sense of conflict and negotiation that relates to moral and formal visions of a society. There is an enormous difference between the application of 'open source' to 'open data' (as envisioned by O'Reilly and others) and potential applications of 'free' software to data. What might the latter look like? Again, visions from architecture may prove helpful, along with artistic experimentation with data politics.

Sennett suggests "porosity of territory, narrative indeterminacy and incomplete form" as three working principles that challenge neo liberal urban design. [7] Openness is not a question of visual transparency, and is not represented by contemporary (i.e., anno 2006) architectural use of glass facades; rather openness should be seen as a 'passage territory'. He exemplifies this with the medieval wall. Unlike conventional conception, walls can function like 'membranes'. The medieval wall not only forms the boundaries of a city, but also attracts unregulated development, such as black markets, and more generally "heretics, foreign exiles, and other misfits." [7] The functions of the wall also highlight how incomplete forms work. Buildings are only complete when situated in a context with other buildings – not as self-referential objects. Hence architecture ought to be engineered fragmental, and leaving subsequent conflicting practices open also creates a narrative of development. This is the kind of 'Darwinist' evolution of cities, envisioned by Jacobs, that roots the community; that makes it care, and enables it to deal with mutation and change.

A passage territory of data – that does not simply strive to open data up for harnessing, but also open it up to the kinds of incompleteness, conflicts, negotiations and narratives that roots it in a community – essentially replaces the 'open' with the 'free'. It is a kind of data that does not claim an immanent truth, but is free to mutation and change, and is expressive rather than indicative. We need 'expressive data', in order to understand and deal with the myth of 'open data' (that is, question it as an unchallenged ideological construct, and self-fulfilling prophecy of an open society).

Expressive data is for instance seen in the strategy of obfuscation, as conveyed by Daniel Howe. [24] Howe sees obfuscation of data as a form of expressive privacy, and uses the examples of browser plugins that evades, distracts, or confuses data gatherers by producing 'noise' in the system; that is, over producing data, or producing false/ambiguous data. Such strategies diminish the reliability (and value) of data aggregations by 'polluting' the data, and can be used both as a means of political expression, or an actual act of resistance to

large-scale surveillance on the Internet. Howe quotes Anna Munster for arguing that in response to data-surveillance we “not simply retreat or withdraw into the issue of privacy”, but rather “become noisy, as noisy as our machines.” [25] One of Howe’s examples of this noisy expressiveness is the project *I Like What I See* by Steve Klise – a web browser extension that automatically clicks all ‘Like’ links on Facebook. On the project’s Github page, Klise writes: “When you visit Facebook, click the thumbs up in the extension bar and start scrolling and liking. Liking and scrolling. Every instance of the word ‘Like’ will be clicked. Don’t worry, Facebook is a fun place full of all of the stuff you like.” [26]

Howe also quotes the artist Eduardo Navas, who for a five-year period has posted data from the plug-in *TrackMeNot* (that obfuscates data by producing pseudo searches on the web) onto his blog *traceblog*. [27] This, he sees as a way of developing an awareness of his own online identity: “According to the developers of the Firefox extension, *TrackMeNot* keeps track of the actual searches and with time begins to assimilate parallel results that somehow reference indirectly what the user would search for.” A similar strategy is applied by the artist Johannes Osterhoff, who for instance in his project *Dear Jeff Besos* that generates emails with information from Amazon Whispernet (that tracks reading behaviours on the Amazon Kindle). Every time he reads on his Kindle, his system automatically sends a personal email to Amazon’s CEO with the information that Whispernet is capturing. [28] Also Winnie Soon’s tracking of spam sender addresses and poetry generator, *Hello Zombie*, is a playful interaction with electronic waste and the ‘un-dead’ nature of data. [29]

Numerous works within contemporary net and software art can be used as examples of how to make data an expression – by obfuscation, reversal, parody, and all imaginable modes of expression. To Howe, Navas, Klise, Osterhoff, Soon and many others, the main concern is not whether the data is open or not, but how they can use it as a mode of free expression that opens up for ambiguities, in an otherwise un-ambiguous and mythical datafied and algorithmic reality. Such strategies of expressive data will eventually also be applied in an urban context – and may even be considered a useful way of cultural adaption, and rooting data.

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