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Introduction

This is a thought experiment about a borough in the city of Greendon in the sovereign state of Datopia. Datopia aims to be as self-sufficient (food, energy etc.) and ecologically sound (low energy, reuse, good air/water quality etc.) as possible.

The borough is called Noham, it was renamed to calm increasing political sensitivity about non-kosher/non-halal food. Actually very little meat of any kind is eaten there, let alone processed meat, except on November 5th when sausages are ritually burnt and eaten. The population size is about 200K and it's pretty dense, not much green space, but the interstitial spaces are well used for food/chickens etc. on the lines of (embargo period) Cuba and Tormorden (qv).

Also, there's encouragement and initiatives for better use of gardens, often using Forest Garden principles (qv) for high-density/low maintenance vegetable and fruit yield (people in Noham are time-poor as in any city). There are incentives for depaving front gardens (see http://depave.org/), and, indeed many 'wrongly' asphalted areas are replanted with fruit trees, bushes and larger trees to shelter them (public forest gardens). This re-greening mitigates the heat island effect and reduces flash flooding too. School children are taught about public harvest from primary school onwards (this doesn't deal with commercial exploitation though, as in the 'mushroom wars' in Epping).

Transport

There is a public transport mix that is (and remains) conventional, buses, subway and light railway. However, everything is reviewed and optimised every year for low pollution, electricity rather than diesel, for example. Noham has something a bit like Uber too called LoVec (local vector), but it is

run as a platform cooperative (qv) using and open source version of allocation and dispatching software run on some of Noham's federated computing. Rides are payable in the Leaf or mixtures of national/local depending on the driver's preferences and the 'logic' of the journey, far or near. To qualify as a LocVec driver, the vehicle must be 100% electric, not a hybrid or petrol.

Some essential journeys are free, paid by public funds. Ownership of diesel vehicles in the borough is being penalised and phased out, although passing through can't necessarily be prevented, they are limited to certain large roads.

Cycling is within the culture and is encouraged for all short distances. Cargo bikes (qv) are used for LoVec optimised local deliveries too. In this case LocVec produces Hamiltonians (qv) and travelling salesmen style solutions for the delivery routes. Drones are banned within borough and must alight at the edges, except medical emergency no-one wants anything that quickly. Where individual transport is used (and this is discouraged) ride sharing and vehicle pooling is also done via mutual owned computer systems. In fact, analysis of journeys, via anonymous/voluntary GPS trace is always continuously improving the opportunities for this.

Work

The urban agriculture and green environment provides both entry level (weeding, bulb planting and tidying, since Noham does not ever use weedkiller, for example) and expert level (tree surgeons, botanists and agronomists for example) work on the doorstep. There's an active commercial sector associated with this too, fruit and vegetable stalls.

This is in additional to more conventional activities, road repair, shops, food, school teaching and building maintenance. Much of infrastructure work is via the Preston Model (qv) via local worker cooperatives and social entreprises. Maintenance always take place in the direction of retrofitting for higher insulation, sustainable materials and higher efficiency solar panels too.

There's a large circular economy sector too, things get repaired, reused, gifted and foraged. Putting things 'out' has been burnt into the culture, little book exchanges everywhere and small scale entreprises that move things around in distance/need based freecycle.

Since Noham uses most of the techniques admired by Datopia, there's a flourishing high-tech sector as well, people running LoVec, managing the system for Leaf, the explanatory voting system and the many IoT systems that monitor pollution, water trees and check water quality, for in an extended CyberGaia nervous system that senses harmful inbalance.

Some of this expertise and innovation is exported both to neighbours and other countries too, but all the core systems are open source, so installation, advice and management are exported. Where people do white collar work at distant locations, most of it is telework, however what we (misakenly) call AI and ML has removed nearly all routine work such as form processing. This cuts down on the more polluting forms of travel and makes family life and childcare easier too. Indeed Noham has closed a small airport on the southern boundary that turned out to be surplus to requirements, so it was turned into a market garden and some low-rise housing.

A couple of the gasometers that used to store town gas (gas made from coal and coke) have been converted to solar supplied vertical farms.

Housing

Housing is provided via community land trusts (qv) and genuine (as opposed to the current crop) housing associations with local government support. This is on the basis of subsidiarity and local management rather than ineffective direct government management.

Trusts and housing association tenants can't buy, but there is a mixture of tenures on new estates, so people live together and could buy where they live. Many of the new builds have a no-car proviso for purchase or tenancy. There's a French model for private rentals, long renewable contracts for tenants, indexed rents and 'winter truce' (tenants cannot be expelled during the winter period, for whatever reason). In general, the set of rights is swung back towards tenants. Being a landlord provides a decent but not extravagant income. Every new build has to have solar as a legal requirement (there's something like this already in France in 2016) and there are generous grants for triple glazing and insulation generally. This and the theoretical work that goes with it are a source of local work too. As regards family size, Noham is crowded, so there are minimum guarantees at replacement- (two children) but there are no guarantees above this. There are almost certainly broader guarantees in less populated parts of Datopia.

Computing

As a borough within the state of Datopia, computing is a central part, but the architecture is somewhat holographic, decentralised and based on simple unflashy components, so that serious outages would slow processing and response time but there would be no loss of service. Services would migrate to the 'next' place.

There's a lot of lightweight message queue chatter and even-more-lightweight message queue chatter from IoT components. Since the borough depends heavily on solar power, the decentralised components are chosen for low power and a certain amount of useful battery autonomy also. All the software within Noham is open source and runs on open source operating systems. Many of the core services have published and public APIs (stuff that gives the chosen actors and the public various kinds of access) so that they can make experiments and suggest ideas and improvements, link things together and perhaps invent new services. There are some limitations, medical data is always private unless aggregated and anonymised, some access is limited so as not to use bandwidth. But the default is 'open'.

Commercial services are welcome to attach to the core and produce value added services, but these must conform to message formats and APIs that are used in the core. There is no embrace, extend and extinguish approach to subverting open source here.

Also the source code for most of the software is published so that other boroughs and unitary authorities can use it without wasting time or money to duplicate the particular function. This is part of huge and continuous exchanges in information too, about 'everything', culturally 'information hoarding' becomes impolite and boorish, the sign of a 20th century mindset.

There's quite a heavy investment in education so that everyone can use what's on offer too. Internet of things uses are in their own section, although they are clearly linked to the core computing described here. Personal level security is provided via MixMode, a multiplicity of simple things that posits that the person is, in fact, who they say they are. That would include live face pictures, verified location and public key cryptography (as long as quantum computing (qv) doesn't break

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this). A great deal of health data is always off-line on transportable media (see French Carte Vitale, as of now, for example) both to provide security and accessibility in case of accident and emergency admission to hospital.

Leisure

Leisure has been abolished in the sense of heavily council controlled 'leisure' centres and pseudo-libraries (with expensive rooms for rent) and no substantial collection of actual books. Leisure as an *activity* was seen to be a mid 20th century capitalist invention to try and prevent after-work rioting when most workers realised that they were doing something mindless. See David Graeber's Bullshit Jobs, essay and more recently the book, and Huxley's commentary on 'work' in Point Counter Point, for example.

Instead Noham council provides a great deal of affordable and/or free space in community centres for community activities. The only centralised facilities are ones that need a lot of maintenance such as swimming pools and larger gyms. People play football rather than watch it. All the activities are categorised and published (where people have opted-in) on a borough wide version of something that looks roughly like eventbrite, but open source and not-for-profit. For paid-for activities, the majority are priced in Leaves or a split between Leaf and national currency. Sport, in general, is something that people do, rather than watch.

The spaces are multi-age and multi-modal, similar to the French Maison de Jeunesse et Culture (MJC, qv). This means that young and old are interacting, to some extent, in the same space. There is not a huge amount of 'this is for young people' and 'this is for old people' either. Since the spaces are multi-modal, lots of different sized spaces, activities can expand and contract without disappearing too.

Energy

There are many federated micro-grids supplied by rooftop solar and some heat pumps. These are managed by local non-profits in the form of mutuals or cooperatives and the energy provides part of a commodity backing for an active local currency, the Leaf. The microgrids (which are a 'hard' problem, optimisation and fair billing) and the federation are, of course, standard practice within Datopia, although the hardware and software is evolving both within the borough and elsewhere.

Some national grid energy is used at minimum levels where there must be continuous baseload, hospital equipment, for example. Hopefully as battery technology and flywheel technology changes, this becomes less and less necessary too. Links with other near (transmission loss) local authorities will also give extra resilience and provide trade balances in other local currencies too. Again, one can consider social policy bond (qv) incentives for year on year reduction of energy within the borough. Free energy is supplied to those in genuine poverty, perhaps with time limits, but this depends on the total output of the federated micro-grids.

Democracy

Democracy is, to some extent, a continuous and real-time process. The people of Noham can and do vote on much of daily lives but:

1. Informed discussion is considered to be as valuable and a necessary preliminary to voting.

2. They understand that they don't necessary get 'everything' most of voting is advisory except in the more conventional elections, every n years.

3. When voting, they are obliged to provide at least two sentences (say) on their reasoning, voting is not just to do with 'counting up'. This is 'explanatory voting'.

4. There are higher priority 'intermediate' votes on budget, as part of participatory budgeting (qv).

5. Political philosophy is part of the secondary school syllabus in the borough too, including types of election, democratic deficit and utility, for example. As with French secondaries, philosophy is part of the core syllabus too.

Of course, now we enter an area that is properly part of Datopia, since all this 'extra' voting is network enabled and 'cheap'. Indeed Wolff (see https://en.wikipedia.org/wiki/In_Defense_of_Anarchism) puts this forward as a way of increasing democratic legitimacy. It wasn't easily possible at time of writing, it is 'now'. However, a certain amount of public office is non-democratic and filled via sortition (qv), roughly the same method used currently for jury service. This means that there is more variety amongst 'citizen' (we cannot say 'elected' in this case) public servants and that they are not chosen by lobby groups or anything that is (for example) financially powerful.

Also, those that desire power or to be politicians are rarely suitable for actual office. There are minimum levels of education, literacy and civics required for election or sortition-based public office. Citizens can reach these levels, at any stage of their lives, via the mixed VLE and seminar based courses. Direct continuous democracy, mixed with sortition makes mistakes but these are at a lower level than lobbyist influenced decisions, non-representation (principle agent problem, qv), complacency and outright corruption.

There is a term limitation, but officials can return after absence. There are no parties only policies and principles. Also, there is continuous (but fairly polite, debate is a taught subject again) debate on discussion boards that are local to the borough.

There is quite a lot of meta-democratic experimentation at all times, too. For example, some technical subjects require wide agreement but are hard to understand, so votes can be delegated to specialists on these occasions. Split decisions are deferred for further discussion too, unless there is public emergency.

Local Currency: The Leaf

There is an active local currency for the borough that is convertible (at a large discount, to discourage a lot of leakage) into the national currency. It is backed in national currency by local energy production, compost, excess fruit and vegetables and consultancy work for other less advanced Datopian areas. The format may be pre-mined cryptocurrency (though this is actually a fetish, rather than something really novel and useful) or a sophisticated mutual social currency with (for example) demmurage (qv) to increase the velocity of the currency. The main ideas are a) currency does not have complex derivatives, though some simple futures might be envisaged to smooth crop variability b) there isn't any money to money or arbitrage activity, there's no way of making money from money, as a design feature.

At the 'edge', brokers have appeared who will convert the Leaf into national currency or neighbouring local currencies at competitive rates, this partialy contradicts b) above but is an 'edge' activity. Partial local tax payment is possible using the Leaf (see the Bristol Pound experiment and other commentary on local currency/taxes) The Leaf is 90% electronic (as part of the Datopian tendency) which keeps transaction costs and management costs to near zero. However, pure electronic also creates privacy and social exclusion concerns, so about 10% is still physical currency.

The central 'bank' is a local mutual or cooperative as with (for example) the Brixton pound. It is probable that most transactions are carried out using phones or simple portable devices that are also suitable for use by market stall holders, small traders and intellectual property producers. Possibly there is a small transaction tax used for whatever the citizens vote for at end of year, parties, fireworks etc. Any local authority in Datopia can have one or many local currencies, but this is not obligatory and they can simply use the national currency, if that's what they decide.

Internet of Things

Since, after all, this is part of Dataopia, let's have a look at some of data-aware things in Noham. These are examples, rather than a complete survey. First, food and energy. All the patchwork and larger bits of urban agriculture have soil moisture reporting sensors and, in some cases hose and actuators that supply water.

Often, manual watering is preferred because it supplies some light work and an opportunity for visual inspection of what's actually growing. There are also, for delicate crops (which are not preferred) small robots that wander and look for pests and disease. All dwellings supply (anonymous by default) near real-time energy use/usage profiles with a description of type of dwelling and usage. This provides deep data for optimising usage, retrofitting insulation and correcting anomalies (short circuits etc.).

So certain public works officials can decloak a feed, but only for a certain time and the decloaking is logged in a security log. Also, this data is necessary for managing the federated micro-grids and deal with peaks that will use centrally generated base-load (this will exist for a while, until battery and maybe flywheel technology (qv) takes over). There are opt-in anonymous GPS traces from everything with the profile of the thing or person that is moving around. Again, people can volunteer as a public services to be 'known' and give commentary with their feed. This is used to estimate upgrades to public transport, suggest new transport share routes and investigate the switch to walking and cycling.

Finance

Noham financials are real-time and completely transparent. This is a mixture of citizen's Panopticon (or sousveillance, qv) and Stafford Beer's Cybersyn (qv). The Cybersyn ideas are also reused in the IoT part of Noham and in Datopia in general. Secondly, Datopia is structured to be (as far as possible) biomimetic in that the boroughs and the unitary authorities are semi-autonomous cells with clear managed boundaries that feed 'up' into Datopia and network amongst their nearest partners (reducing transport-based pollution), rather than Datopia feeding 'down' (or trying to feed down, as central governments usually fail to do) and controlling the subsidiary units.

The organisation is bottom-up with a strong principle of subsidiarity (cited, but never really applied in the EU, for example). Financials are conducted with an objective of near self-sufficiency, buildings are repaired, building materials recycled, maintenance and long-life are prioritised over replacement. However, the human and physical drives the 'financial' according to the ideas of (for example, Ghazali), not the other way around. Where they do not create perverse incentives (such as human harm) social policy bonds are used, for example, to tidy up neglected areas.

Some crowdfunding (both in local and national currencies) is used for medium sized projects that are 'optional' but a simple taxation system is still used for base-load items such as schools, public salaries and highways. Any and all optimisation efforts go into 'things' and materials rather than human resources,. Previously, officials concentrated on shiny 'things' but never paid anyone to teach or use them. Optimisation and 'efficiency' are not usually high priorities either, unless there is, for example, genuine need or genuine scarcity. For large projects, Datopia still has something resembling the Public Works Loan Board which issues loans from government created, Bradbury pound (qv) style money. Private creation of money by banks (most are mutuals, the for-profit banks have nearly died out) is limited but multi-spectrum (see Anne Pettifor on the production of money).

Education

Early education is still school based, to some extent, but, in general, it is also continuous. There has been a shift from rote learning and league tables to a more creative style, centered on human potential. This is a return to the Greek root of 'drawing out' whatever is in there. Maths, language (usually English) and civics (how Noham and Datopia 'work, as an open and critical view) are essential at intermediate level. Science and technology subjects, which require things to 'work' (bridges, aircraft etc.) are still taught and examined conventionally, we don't wish for under-educated brain surgeons or engineers.

There are a great many joint projects at all school levels, so that unhealthy rivalries (some of which became gangs, earlier in Datopia's development) develop to a lesser extent. They'll probably always exist somewhat, in spite of Kropotkin (qv). Meanwhile, at any age, there are both local and Datopia-wide virtual learning environment + seminars (some self-run) for 'everything'. Many of these are contributed by enthusiasts too, gardening, knitting and various kinds of music, for example. Other local modules give people skills that will enable them to work, to change jobs or just to 'know something else'. VLE is not always used by itself, since the drop out rate, due to isolation and motivation levels tends to be quite high. Also Noham is, above all, 'social', people doing things together.

Modules can be taken without any testing for self-actualisation or pleasure or with-testing, so that success has an influence on profession or job. Why is there emphasis on civics in education? So that people understand something about informed choices and the consequences of choosing and not-choosing. There are also courses in critical thinking and a (less popular) course on rhetoric, also known as SVPB (saying very plausible bullshit).

Security

Even in Datopia people still do bad things. First, there's no 'war on drugs' that was both lost and unnecessary. Marijuana, preferably eaten or drunk is the mainstream drug of choice (as I'm writing this, even the Conservatives are coming around to this) and alcohol is not illegal but has been marginalised. There is education and serious social pressure against the more destructive drugs, but they are not criminalised, something that we now understand just creates extensive criminal markets and therefore collateral crime.

People in real trouble with addiction have access to extensive medical help and conventional twelve-step and other assorted support groups. There is generally less addiction and problematic drug taking because work, society and the environment are less alienating and stressful.

Domestic violence and abuse and resulting cycle of violence (the abused are more likely to become abusers) are still a problem, for example. Education is helping with this but the conventional removal of the abused from the household still takes place. Data helps, for example spikes in nonattendance at school and sudden changes in grades.

People are a great deal more equal and there's no a) substantial issues of scarcity b) object fetishes, since there's a very heavy tax on consumer advertising (see Cancel the Apocalypse). The tax on advertising has also resulted in the removal of billboard and electronic advertising clutter from the streets.

Currently, many prison inmates are illiterate or nearly so, they can't cope (easily) with modern life. This problem has nearly disappeared because of all the free virtual learning environments (VLEs) that are available in Datopia. These, basic skill ones are run country wide rather than being provided in boroughs and unitary authorities. Datopia still doesn't have good solutions for psychopathy, especially when it leads to murder. The Woman on the Edge of Time (qv) solution (judicial murder) is still being considered for those that kill more than once. The data glut does mean that detection is 'earlier'.

Sociopathy, usually the result of abusive environments, is diminishing. Elimination of a great deal of the petty crime 'background noise' means that the whole system can concentrate on the more serious problems, both research and remedy.

Health

Public health is emphasised over 'sickness'. The problem with public health has been that it is not part of the 'economy'. If someone is healthy, they are not visiting the doctor, taking expensive drugs and having regular and expensive hospital admissions.

Certain drug manufacturers and medical suppliers would, frankly, prefer people to be ill, they make money from it. There actually needs to be a huge debate about 'cure', 'remedy' and and research/manufacturing resources (analogous to make, repair and replace/upgrade problems for 'products'). This is very important but beyond the scope of the current document.

However, illness is a quality of life issue for the person and an externality (home care, for example) for the rest of society. So, at the level of Datopia and Greendon (air pollution does not respect man made boundaries, remember?), huge efforts are made to remove anything and everything noxious from the environment. That is pesticides, air pollution, water pollution (including the underestimated poisonous road run-off), noise pollution, light pollution (yes, we turn off street lights, as we used to, back in the day) and anything that we know to be direct implicated in human distress or illness.

Also, there are a set of regular checkups at a given ages with some advice about diet and exercise where necessary. We've given up on the idea of big and beautiful too, joint, heart and a number of other obvious problems associated with voluntary obesity. Since there's a great deal less advertising for the more noxious types of food, this is gradually becoming less of a problem, as with cigarettes in a previous age. Also, we have a pleasanter, more car-free, greener public realm meaning that we can walk, run and cycle a great deal more.

There is basic gym equipment, table-tennis tables and free aerobics and taichi in the parks and open spaces too. The emphasis on public health (rather than provisioning for more and more sickness) takes pressure off all acute sickness-based services too. This means that life-threatening problems, detected cancers and heart problems for example, are dealt with much more quickly. Antibiotics and pain killers are discouraged.

Also, services are pre-emptive, for example, mole removal and corrective surgery before problems spiral out of control too. A better diet from (largely) locally grown, pesticide-free food should show up in improvements to health too, as will improved sleeping patterns.

Public Realm

The public realm has become less cluttered, covered with a great deal more greenery (rather than the usual tree-in-a-box approach of the so-called placemakers) and a great deal quieter. The bigger roads have smaller vehicle lanes, bus lanes and segregated cycle lanes. Trees and bushes separate roadway from ample pavements that have both cafe and public seats. Now that advertising is heavily taxed, display panels and billboards have been removed, there is less visual aggression.
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There are discrete displays for current general levels of pollution, the state of the budget and today's events, as pioneered by French towns and villages in 1990s. Datopia and Noham have managed to catch up. Any new build is also judged for aesthetics, developers are no longer allowed to throw up ugly out-of-character, out-of-proportion buildings into existing space. This is aided by the use of continuous democracy and sortition which help break the often unhealthy link between (paid and 'chosen') officials and developers.

There is a strategic plan for the whole of Noham, voted and commented by residents but this is subject to revision rather than being a strait-jacket. Apart from trees, bushes, flowers and generous pavements, there is a great deal of public art, some of it as joint school projects. This discourages graffiti and internecine rivalries. Most of the significant green spaces have been stitched together with (new technology) lightweight bridges so that one can walk, run or cycle without meeting any traffic. This enables children to explore with minimal danger too. We all need to 'get out more'. Incidentally, this would be my vision for the London City Park proposal, much cheaper than the 'Olympics' and greater durable public benefit.

Notes for Improvements