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The future of Healthy Places

Urban Greenspace

The first point to make is that research examining the relationship between proximity to well managed urban greenspace and good health is very consistent - [green space in urban environments benefits a population's health](#) in multiple ways. Not just in urban environments, that's what we are interested in here, but natural landscapes provide essential ecosystem services from catchment level through to global scale services. Nature is good. Many of us like to wander in green fields and forests when we get the chance - it makes us feel good. Most people get that, but there's more.

We've been doing some thinking about urban greenspace, where most of us live, and I've come up with list of things that I think will limit the population health benefits derived from urban greenspace in the UK and what we'll need to do about it. I'd really like to hear your views.

Trends.

1. Funding pressures on government will continue and traditional [local authority managed city parks](#) will be fewer in number, size and have less biodiversity. Councils will also reduce the amount of greenery on high streets and pedestrianised areas to minimise maintenance costs.
2. Demand for new housing will force councils to [relax the greenspace requirements](#) in new developments, so we'll see fewer green playgrounds, fewer street trees and less biodiversity.
3. Inequality of [access to urban greenspace](#) will grow. This will further increase health inequality, as it is more expensive for councils to retrofit biodiverse greenspace into older poorer neighbourhoods and any significant effort in this direction will increase property values and push out the very people that most need access to greenspace.

Well that's all a bit depressing, isn't it?

Hang on a minute though, don't most UK cities and towns have plenty of greenspace and parks already?

Some do, but it might not be the right type of greenspace and it might not be in the right areas. Also note that I've used the terms 'biodiversity' and 'biodiverse', all greenspace is definitely not the same in terms of potential health benefit, so read on if you'd like to hear some new thinking from the nascent field of microbiome science.

Microbiome Science

Unless you've been doing a prolonged Rip van Winkle, you will have heard of the [human microbiome](#) and if you are a science nerd you know that this is even more exciting than the [human genome](#) mapping events of 2003! However, if you aren't a science nerd and have been living outside the science news bubble, then what you need to know is that '[microbiome](#)' is the term used to describe all the microbiota living in a particular location and their genetic material.

What?

Bugs. Small, i.e. 'micro-like' small. Lots of them - bacteria, virus, fungi, phages. All those and more, the microbiology, are living in and on all larger animals, in soils, in the water, and on vegetation. The genetics bit is where it all gets exciting though, because the [techniques for assessing](#) what kind of bugs are living in any location have gotten better in the last few years. Much better.

So what?

Now we have the technology to quantify the type and number of microorganisms in almost any environment, i.e. we can measure microbiomes. This is important because we know that microbiomes impact almost every aspect of our health and we are getting very close to being able to use this knowledge in the delivery of healthcare - you may have heard about [faecal transplants](#), well there is much more to come!

Human microbiome investigations have now reached a critical inflection point. We are transitioning from description and investigation to understanding the mechanism of action and developing new clinical interventions on the basis of this understanding ([Gilbert et al. 2018, Nature Medicine](#)).

So now we have the technology to examine microbiomes, and we have quite a bit of knowledge as to how they impact our health. How can we begin using this knowledge in public health, does it have any relevance at all to our practice and effort to improve

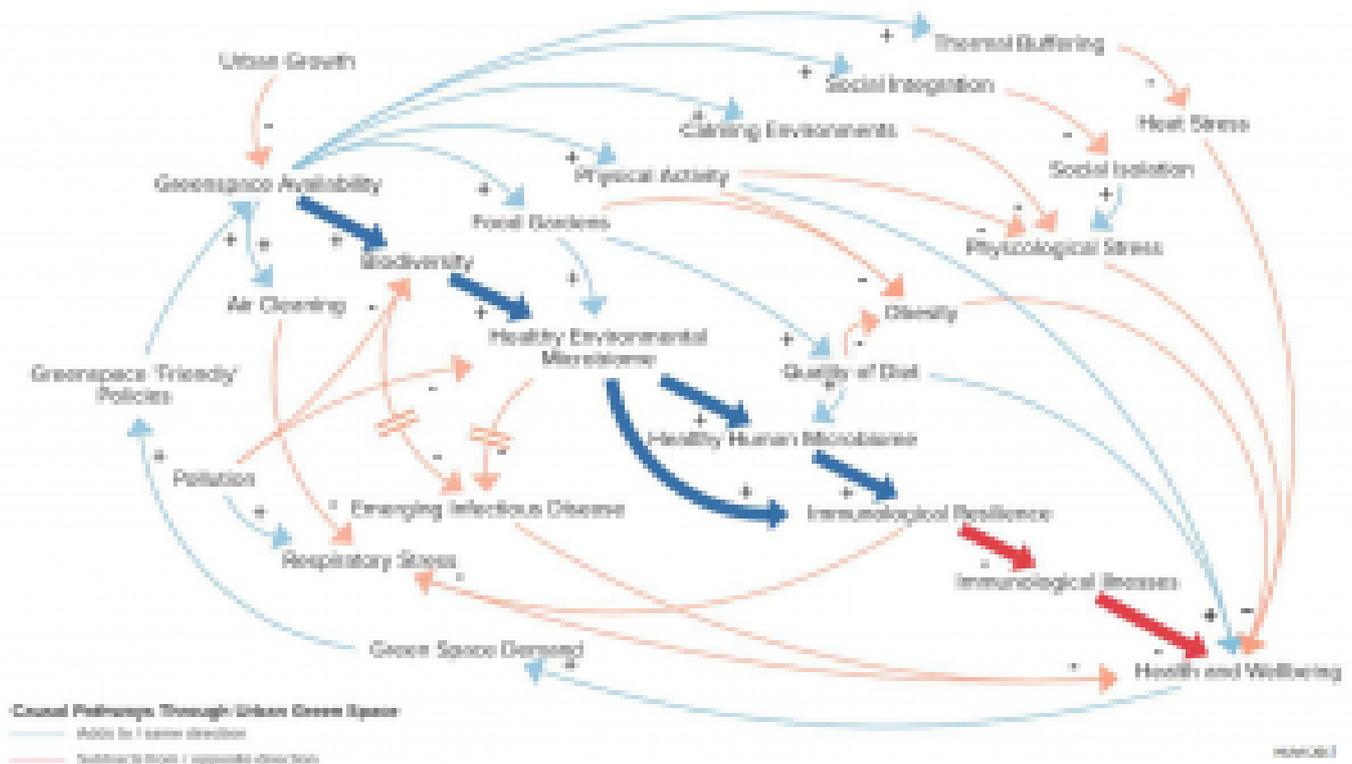
population health and wellbeing?

Healthy Urban Microbiome Initiative (HUMI)

Scientists at the University of Adelaide are also looking at microbiomes in the environment. Conservation ecologists are very interested in microbiomes, because the health of vegetation ecosystems depends on soil microbiomes and vice-versa, and this is critical in the [restoration of degraded environments](#). Their research has demonstrated a link between the soil microbiome and the biodiversity of plants found in a particular ecosystem and they've come to the conclusion that higher plant biodiversity in natural environments is associated with a 'healthier microbiome' (I'll leave the trickier topic of what might constitute a 'healthy microbiome' to a later blog).

These scientists started talking with a public health researcher in their school, [Professor Philip Weinstein](#), and this led to a collaboration and sharing of ideas that became HUMI. Public health researchers had known for sometime about these links, terming this the '[hygiene hypothesis](#)', and a seminal paper by [Graham Rook](#) in 2013 laid this out nicely in the context of the emerging field of microbiome science.

While they had several small projects in play, they hadn't worked across disciplinary boundaries before. At least not at any scale. I was invited to play a small but fun role in facilitating the first group exchange of ideas from many different 'research voices' and together we mapped out a very simple causal pathway model around which they could organise the necessary collaborations. This diverse gathering of researchers are now looking at how environmental microbiomes impact human health in a positive way by stimulating the immune system with 'healthy environmental microbiomes'.



They began thinking big, but where do you start; is this a candidate for a randomised control trial (RCT)? Possibly, but maybe not quite yet. RCTs deliver some of the most compelling health research data – epidemiologically, they can be top draw studies. However, they are also expensive to run and notoriously difficult to implement ‘in the wild’, let alone in urban parks and gardens, besides we are still learning about the role of environmental microbiomes in urban greenspace. There are also numerous other really important influences on human microbiomes and immune systems, like diet, pollution, and health status. It’s complicated. It’s complex. It’s just not time yet.

So they are doing two things: (1) pulling together researchers, public health practitioners and municipal authorities who are interested in looking beyond (way beyond) the here and now concerns of maintaining urban greenspace – maybe a bigger group will allow them to get a research ‘initiative’ of the scale they think is required, up and running faster, and (2) they looked at the literature and what was happening around the world in terms of urbanisation (a driver of immune related disease) and how Graham Rook’s work could be tested within a public health framework. They wrote their own [review](#) to try and share their understanding of the latest science, and also to assess what was happening in the practice of public health and within urban policy environments around the world. There is a lot going on.

Who needs to be in the room?

HUMI is starting to gather steam, although they haven't yet landed the major programme funding. They are currently working with four implementation partners: in Playford, South Australia; New Delhi, India; Haikou, China; and Bournemouth, UK. Participating organisations include: South Australian Health, Playford City Council, Public Health Foundation of India, Jawaharlal Nehru University, CDC China, Public Health Dorset, Bournemouth Borough Council, and Public Health England.

We are holding a workshop on 31 May 2018 in Bournemouth to talk about the pilot project work they have done in each implementation partner city, including Bournemouth, to see if we can add some additional partners to this international endeavour. A small number of speakers will set the scene on the day to talk about HUMI 'the initiative' (me), the current state of greenspace research (Dr Lovell - Research Fellow, Biodiversity and Health, University of Exeter Medical School), the HUMI pilot project results thus far (Professor Weinstein), and what this might mean in the context of integrated care systems (Professor David Phillips, Chief Officer Population Health, Dorset Integrated Care System).

I will report back on this meeting in a future blog.

This futures blog

This blog is about 'healthy places' and what our possible 'futures' could be given current trends and momentum within society, the economic and political systems, and the environment. I use the plural 'futures' intentionally, because our future is not pre-determined (I hope), we can and should work towards the future we want. This blog aims to generate discussion (maybe even some debate) around 'Healthy places futures' in the hope that if we all put our minds to it, a collective vision may emerge, which would inform any strategy we might put in place to get us to our preferred future. We'll be leaning on heavily on futuring tools found on our Shaping Tomorrow hosted website: phd.shapingtomorrow.com.

The future is already here — it's just not very evenly distributed (William Gibson 1993).