Nine good things about open science

& one bad thing

Alasdair Rae
University of Sheffield

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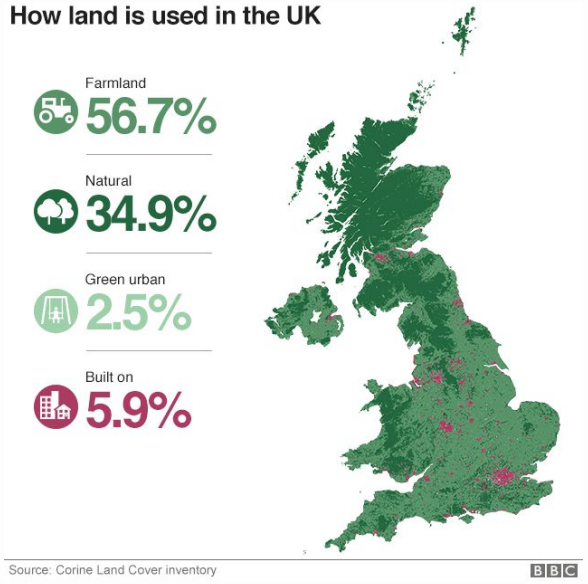

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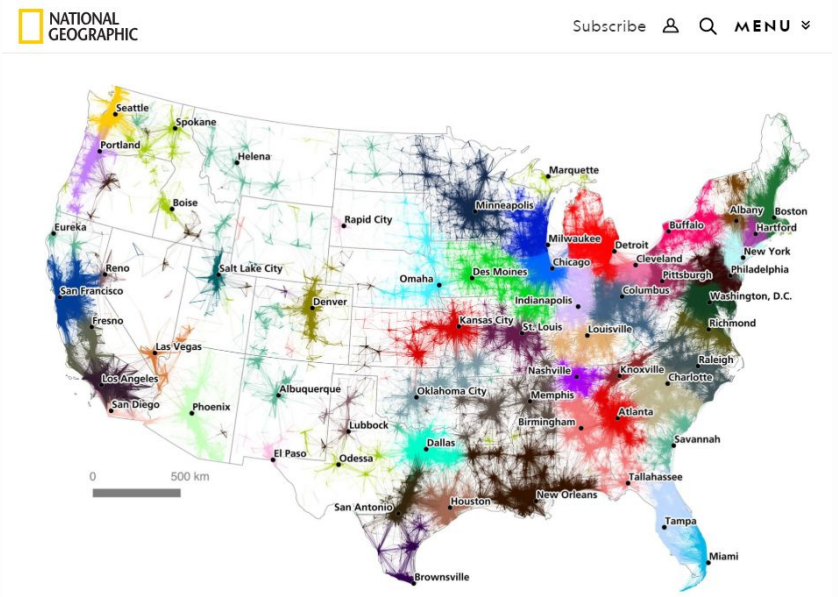

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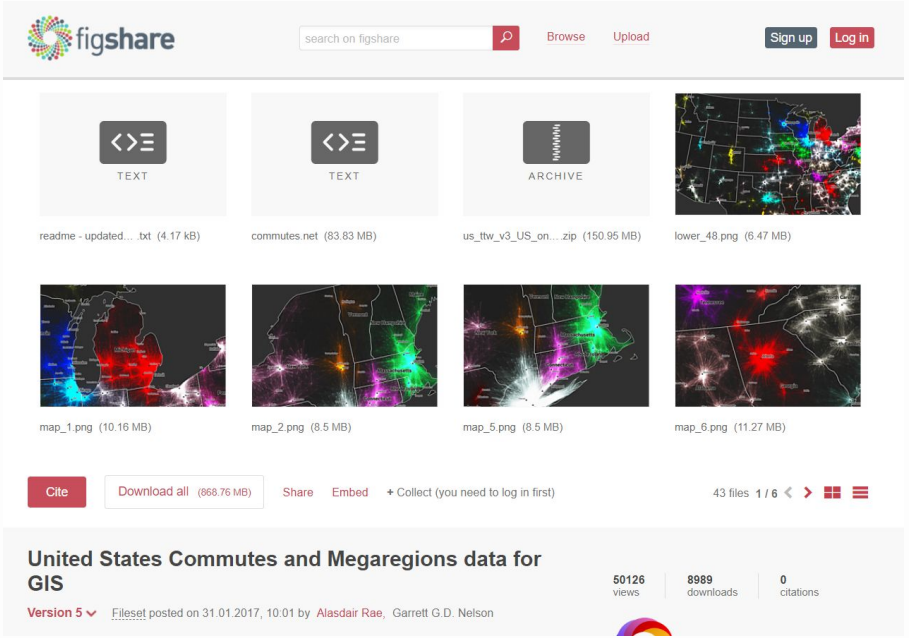
e.g. Figshare



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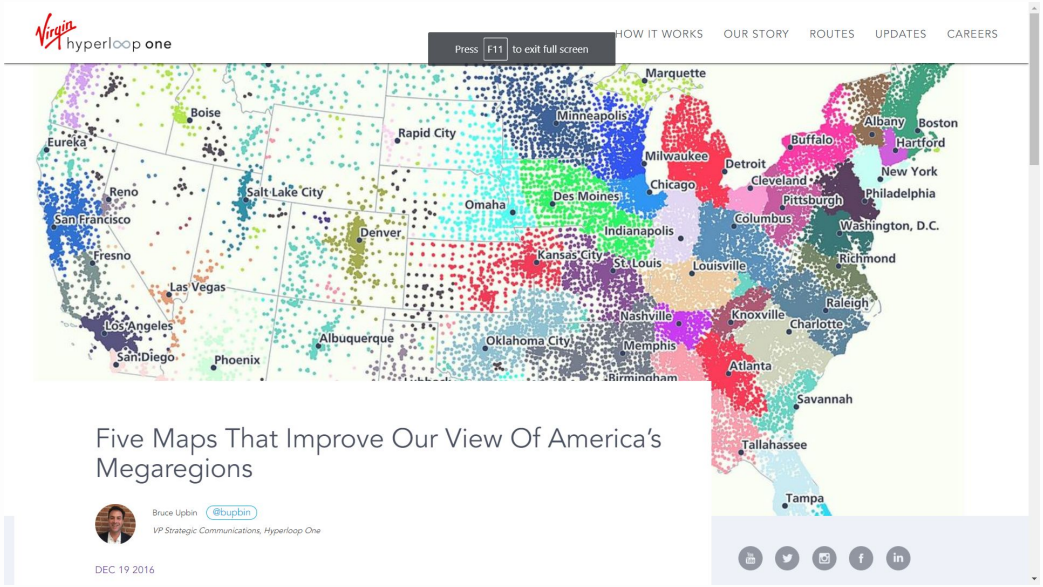
It's a good thing to do

hyperloop



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It's the right thing to do

Bobbleheads

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It’ll look bad if you don’t

People will

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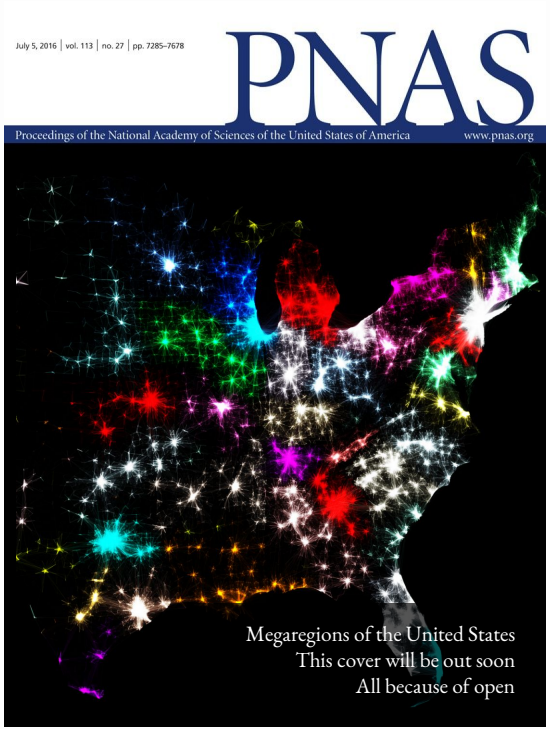

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Others will find it helpful

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Populations, megapopulations, and the areal unit problem

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ABSTRACT

Models of epidemic disease and programs for their management require accurate population data as a critical component of most studies. But the traditional definitions of urban places assumed discrete borders and localized populations. The vast increase in urban travel at all scales has raised the problem of how we define those urban populations. This paper reviews the issues as an areal unit problem within the context of the evolving idea of "megaregions" and their definition.

1. Introduction

Models of dynamic infectious disease events assume a bacterium or virus will spread within a susceptible community of persons to other, easily identified at-risk populations through a network of interpersonal contacts or commercial exchanges linking infected and at-risk populations (Altman, 1995). Studies of disease expansion, either simulations (Orbann et al., 2017) or analyses of reported epidemics, therefore have required three distinct but related data sets. The first two describe clearly defined, stable populations, one infected and the other susceptible (at risk). These must be of sufficient size for each to support first the transfer to and then the propagation of bacterial or viral entities within their jurisdictions (Balcan and Vespignani, 2012). A third dataset describes one or another measure of connectivity permitting disease transfer between those distinct population centers.

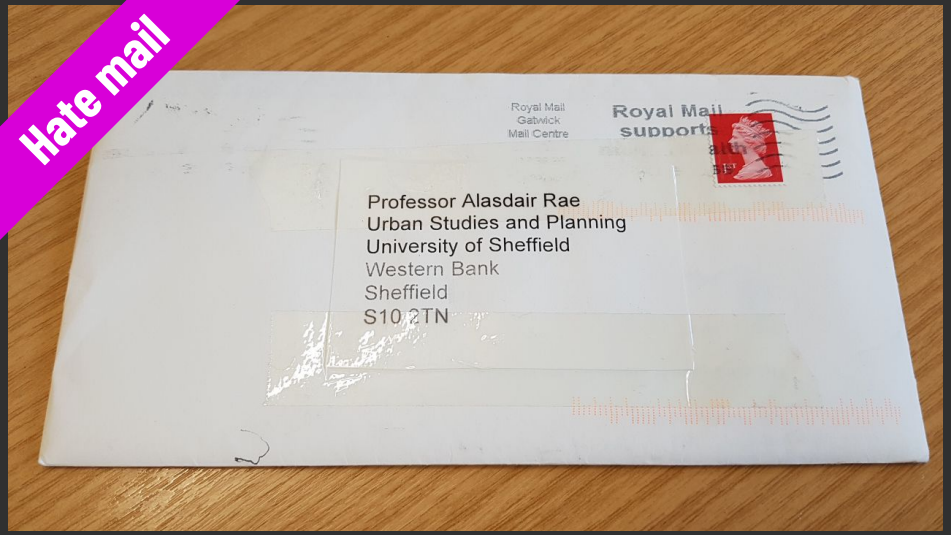
A critical question often overlooked in both disease modeling and event analysis is how best to define areal units that accurately describe those populations. It has long been understood that population models employing different areal units will return different results when individual data are aggregated to local, urban, state, or national scales of address (Duncan et al., 1961). In defining a unit for study three things are critical. First, the constancy of this or that jurisdictional boundary encompassing a population and, second, the quality of reportage on that population. Third, and of equal importance, is the degree to which those units reflect a stable population embedded in a network promoting transfer between different but similarly defined units.

2. The Urban

Cities have long served as a principal areal unit in disease studies, both as sites of infection and as loci of disease transfer. It was for this reason that in the fourteenth century quarantine programs first banned travelers from infected to epidemic-free port cities in an attempt to protect at-risk populations (Rosen 1993, 43–45). In the late eighteenth century local health boards, constituted in part to address yellow fever outbreaks in the U.S., were charged with collecting primary data on local disease incidence, advising citizens on how best to avoid contagion, and on enacting measures to manage where they could not prevent an outbreak in their cities (Koch, 2017, 33–38).

Similarly the assumption has always been that human travel–international, national, and local–is a principal vector for disease transmission between population centers. It was a strong motif in Holbein the Younger's famous sixteenth century *Dance Macabre's* commentary on plague (Holbein, 1538/, 1971). In the first modern global pandemic, cholera incidence was mapped in the nineteenth century, city by city along existing sea and land routes (Brigham, 1832; Koch, 2017, 260–171). Contemporary studies have focused less on the nature of urban places as disease catchments and more on the networks that connect them (Brockmann and Hufnagel, 2006); Balcan et al. (2009)). Principal attention has centered on international airline passenger flights (Colizza, Barrat, Barthelemy and Vespignani, 2006) and international cargo ship carriage (Kaluza et al., 2010) as disease vectors (Tatem et al., 2012; Teran-Romer et al., 2017). Airline travel has been

Hate mail



Please note: *In the residential typology maps in the original version of this study, the Escalator and Gentrifier categories were labelled incorrectly. Escalators were labelled as Gentrifiers, and vice versa. This was corrected in January 2018, and a revised report made available. JRF and the authors apologise for this error.*

THE TIMES

Scrapping half of councils 'will save cash and boost efficiency'

Marc Horne

October 17 2018, 12:01am,
The Times

Theatre

Greater Glasgow would become the largest local authority in Britain if a study's proposal is adopted
JONATHAN NICHOLSON/GETTY IMAGES

Scotland has too many councils and almost half of them should be scrapped to save money, a report has suggested.

The number of local authorities should be reduced from 32 to 17, according to an academic paper. The study, by the University of Sheffield, supported the creation of Greater Glasgow, which would be Britain's largest local authority and combine Renfrewshire, East Renfrewshire and East and West Dunbartonshire with the city of Glasgow.

The Times Scotland ✓
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thetimes.co.uk

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clarabel @Skinnycortado · Oct 17

Replying to @thetimesscot @sheffielduni

Thanks for the interest but I think Scotland can manage to run our local govt services without any help from Sheffield Uni.

9

Conachair @sugaracre · Oct 17

Replying to @thetimesscot @sheffielduni

Which scruffy team of beer-swilling, hemp-dragging undergraduates was responsible for that pile of mince, and who paid for it? Unlike England Scotland has unitary authorities and lots of strategic joint working.

The Hipcrime Vocab @Chad_C_Mulligan · Oct 17

Replying to @thetimesscot @sheffielduni

Have the people writing this "study" even visited Scotland? My council area is already massive, stretching from Leadhills near Dumfries and Galloway, up to Rutherglen in Glasgow.

6

Feral_Timelord3 @Timelord3Feral · Oct 18

Replying to @thetimesscot @sheffielduni

Sheffield Uni can f u u u ck ooooo ffffff

Slides with links

http://bit.ly/scidata18-rae