http://discovery.dartmouth.edu/megaregions/

“The idea of megaregions is sort of an old one”

BosWas is a concept.

“What a lot of people have done when they draw these megaregions they rely on common sense. They look at nighttime satellite imageries, look at map and lump connected areas together.”

“What we did was twofold. We started with this really interesting dataset that comes from the census, which tracks commuters.”

Community detection: if you have a set of points and how strong each is connected to each other, you can do some math to see where the connections area.

Took that technique (used by Facebook) and applied it to the commute data. If a suburb of Minneapolis has many commutes into Downtown Minneapolis that’s a strong connection than from Los Angeles to Minneapolis.”

It doesn’t know that St. Paul that is next to Minneapolis. It only knows how strongly they are connected, not their spacial locations.

“The goal is to put lines in places where the fewest number of people are crossing those lines to make a commute.”

These are not watersheds. People are commuting across all of these boundaries. The borders are where they crossover the least.

“I wouldn’t say there’s anything wrong with the RPA’s version.”

“What differs in this map is we’re actually able to distinguish where breaks or borders occur that aren’t necessarily visible to the naked eye.”

The computer lumps LaCross and Eau Claire into that region. The computer is evaluating it via statistics rather than our common sense

“We’ve been really surprised.”

“We’ve talked to people who are like these findings make sense according tot heir own experiences

“The computer doesn’t know anything about culutural patterns or interpretive types of geography.”

The computer is blind to how these regions are culturally lumped together but reveals them anyway.

We have an economy and culture that’s deeply interlinked.

“There was a time when these cities were distinct from one another, but now they have become deeply interlaced.”

We really have to think about these places as an interactive whole.

“In the same way neighborhoods are linked together to form a city, we know that cities are linked together to form regions.”

“Our biggest hope it encourages people to experiment with borders and not just go with borders that have been around since the 17th century.”

Borders were drawn for reasons that don’t exist anymore. Borders control how you vote, where you pay taxes and where infrastructure goes. It may not match how we’re living in the 21st century. They may not make much sense when talking about an economy that’s deeply interlinked.

That thinking about borders can’t just be something that bureaucrats deal with. People have to think about how they’re connected to each other.

He made up most of those.

Tried to spread them across different categories.

One thing we did try to do was not just name them after their big cities. It’s these newly emerging systems that connect a lot of different types of geography.

Laurentide = the ice sheet

**Chris Jones, senior vice president of the Regional Plan Association**

The whole concept of a megaregion dates back to the 1960’s. The term was coined in the Northeast Megalopolis emerging at the time. We revived that notion along with the Billington Institute when we looked at the way that metropolitan areas were really converging.

There’s no readily accepted definition of a megaregion. You have a central city that’s within a labor market where people can commute in and out.

They are geographic that have common economic or planning challenges. Common landscapes (Rock Mountains). They have linked trading systems and labor markets. Companies trade with each other on a frequent basis. Common transportation infrastructure.

When we defined megaregions by these different criteria. We defined 10 regions. The Great Lakes was the broadest defined. That was basically this idea of a common economic base with similar challenges. That was the basic concept we were promoting.

There are certain types of policy implications that these lend themselves to. High speed rail was a common one. Most of these regions are places where highspeed rail systems make sense.

Linking different types of transportation infrastructure.

The infrastructure challenges are the largest. It faces the biggest funding challenges.

The political challenges as well. It’s difficult enough to get metropolitan regions to collaborate. The Twin Cities pioneered that with the Met Council.

The more important idea is the concept than the actual definition of some of these megaregions. It was a good step forward.

**From http://www.cts.umn.edu/sites/default/files/files/sessions/0-ross.pdf**

UMN CTS study

**From https://en.wikipedia.org/wiki/Megaregions\_of\_the\_United\_States**

Megaregions of the United States are clustered networks of US-American cities, the population of which currently ranges or is projected to range from about 57 to 63 million by the year 2025.[1][2][3]

America 2050,[4] a project of the Regional Plan Association, lists 11 megaregions in the United States, Canada and Mexico.[1] Megapolitan areas were explored in a July 2005 report by Robert E. Lang and Dawn Dhavale of the Metropolitan Institute at Virginia Tech.[5] A later 2007 article by Lang and Nelson uses 20 megapolitan areas grouped into 10 megaregions.[6] The concept is based on the original megalopolis model

**From https://en.wikipedia.org/wiki/Megalopolis**

A megalopolis (sometimes called a megapolis; also megaregion, or supercity)[1] is typically defined as a chain of roughly adjacent metropolitan areas. The term was used by Patrick Geddes in his 1915 book Cities in Evolution,[2] by Oswald Spengler in his 1918 book The Decline of the West, and Lewis Mumford in his 1938 book The Culture of Cities, which described it as the first stage in urban overdevelopment and social decline. Later, it was used by Jean Gottmann in his landmark 1961 study, Megalopolis: The Urbanized Northeastern Seaboard of the United States, to describe the chain of metropolitan areas along the northeastern seaboard of the U.S. extending from Boston, Massachusetts, through New York City, Philadelphia, Baltimore, and ending in Washington, D.C. and Northern Virginia.[3][4][5] The latter is sometimes called the "BosWash megalopolis".

**From http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0166083#sec002**

The emergence in the United States of large-scale “megaregions” centered on major metropolitan areas is a phenomenon often taken for granted in both scholarly studies and popular accounts of contemporary economic geography. This paper uses a data set of more than 4,000,000 commuter flows as the basis for an empirical approach to the identification of such megaregions. We compare a method which uses a visual heuristic for understanding areal aggregation to a method which uses a computational partitioning algorithm, and we reflect upon the strengths and limitations of both. We discuss how choices about input parameters and scale of analysis can lead to different results, and stress the importance of comparing computational results with “common sense” interpretations of geographic coherence. The results provide a new perspective on the functional economic geography of the United States from a megaregion perspective, and shed light on the old geographic problem of the division of space into areal units.

The concept of the “megaregion”—like similar precedent concepts such as the “conurbation” [18] or “megalopolis” [19]—has developed in response to new patterns of economic integration operating across wider geographic scales. As the functional patterns of human geography have transformed and rendered older territories inadequate or obsolete for the purpose of managing public services, one of the key concerns in studies of these kinds has been the practical question of how to divide space into new administrative regions whose geographic logic follows the underlying functional structure of these new patterns.

“Megaregions” may well pass a common-sense test, based on a recognition of the ways in which larger areas have been substantively tied together by the forces of urban development, telecommunications, the frictionless circulation of capital, and the consolidation of both public and private institutions. However, the problem of how to empirically determine the existence and precise shape of these areas is an extension of the old geographic problem of dividing space into unit areas. In this paper, we attempt to show the functional existence of megaregions in the United States by turning to a large data set of commuting patterns and showing how “natural” patterns of community clustering can be demonstrated both through visual interpretation as well as through statistical analysis.

We believe that our results offer a new, more empirically rigorous evaluation of megaregions and demonstrate the utility of this approach in gaining a better understanding of the functional economic geography of the United States at a macro-spatial scale.

**Data and Methods**

We focus on journeys to work (commutes) owing to their importance in the functioning of local and regional labor markets, and because the volume of data available provides a robust test case for the community partitioning algorithm we describe below. In section 4 of the paper, we report our results based on an analysis of more than 70,000 spatial nodes and more than 4,000,000 connections between them, using a combination of desktop and cloud computing.

Given the geography of travel to work in the United States, the county scale of aggregation was deemed too coarse and too variable to be of use. The most populous county, Los Angeles County, is home to more than 10,000,000 people while the least populous, Loving County, Texas, is home to fewer than 100. The mean county population at the time of the 2010 US Census was almost 100,000. Further, many of the nation’s more than 3,000 counties are far larger or far smaller than the metropolitan areas within which they are located, making any analysis of journeys to work at this scale problematic, in the sense that the geographic scale of analysis would be too large to identify the underlying phenomenon of journey to work patterns we seek to investigate.

Therefore, we decided to focus our analysis at a finer geographic resolution in order to capture, as far as possible, the volume and diversity of flows. For this purpose, the Census Tract was deemed the most appropriate spatial unit, since it has an average population of just over 4,000 and Census Tracts are geographically large enough to contain major numbers of employees, unlike smaller Census units such as Blocks or Block Groups. Data on journeys to work are reported for just over 74,000 Census Tracts in the United States and are available from two different sources: the American Community Survey (ACS) commuting and workplace data and the Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES). These complementary datasets can help us answer important questions about the economic, demographic and spatial relationships associated with daily journeys to work for more than 130 million Americans but they differ in several important respects [22], as we explain below.

**By coloring connections according to the assigned community of their destination node, we can see cases where neighboring communities are strongly interlinked, and also cases where communities are fairly autarchic in terms of their commuting patterns. Fig 7 shows the relative density of interconnections between the Los Angeles and San Diego detected regions (inter-community connections to mid-coast California and Las Vegas are also evident). This can be compared to Fig 8, which shows how the detected community in the Minneapolis-St. Paul region is more self-contained in terms of its commuter flows, with relatively few commutes stretching to or from neighboring communities.**

**The interweaving colors evident in such maps show just how difficult it is to discover a perfect natural break within the pattern of commuter geography. The high modularity score of Combo’s output shows that the algorithm has produced a partitioning scheme in which the vast majority of commutes are contained within a single community. However, this still leaves thousands of commutes which cross communities. Fig 9 shows every commute in the Lower 48 states where the assigned community of the origin and the assigned community of the destination are different. This gives a sense of just how incorrect it is to call these partitioned communities truly ‘independent’ or autarchic in terms of their economic geography. For instance, the northeastern seaboard, the Great Lakes, and California are heavily interlinked by commutes which stretch across regions. A large number of east-to-west flows connect between the Miami and Central Florida regions. By contrast, not a single commute to New Orleans originates from outside of the Combo-assigned New Orleans community; the Twin Cities, similarly, pulls relatively few commuters from outside its own assigned region.**

**From http://www.america2050.org/megaregions.html**

As metropolitan regions continued to expand throughout the second half of the 20th century their boundaries began to blur, creating a new scale of geography now known as the megaregion. Interlocking economic systems, shared natural resources and ecosystems, and common transportation systems link these population centers together. As continued population growth and low density settlement patterns place increasing pressure on these systems, there is greater impetus to coordinate policy at this expanded scale.

**From https://www.nytimes.com/2016/04/17/opinion/sunday/a-new-map-for-america.html**

America faces a two-part problem. It’s no secret that the country has fallen behind on infrastructure spending. But it’s not just a matter of how much is spent on catching up, but how and where it is spent. Advanced economies in Western Europe and Asia are reorienting themselves around robust urban clusters of advanced industry. Unfortunately, American policy making remains wedded to an antiquated political structure of 50 distinct states.

To an extent, America is already headed toward a metropolis-first arrangement. The states aren’t about to go away, but economically and socially, the country is drifting toward looser metropolitan and regional formations, anchored by the great cities and urban archipelagos that already lead global economic circuits.

The Northeastern megalopolis, stretching from Boston to Washington, contains more than 50 million people and represents 20 percent of America’s gross domestic product. Greater Los Angeles accounts for more than 10 percent of G.D.P. These city-states matter far more than most American states — and connectivity to these urban clusters determines Americans’ long-term economic viability far more than which state they reside in.

This reshuffling has profound economic consequences. America is increasingly divided not between red states and blue states, but between connected hubs and disconnected backwaters. Bruce Katz of the Brookings Institution has pointed out that of America’s 350 major metro areas, the cities with more than three million people have rebounded far better from the financial crisis. Meanwhile, smaller cities like Dayton, Ohio, already floundering, have been falling further behind, as have countless disconnected small towns across the country.

**From https://www.washingtonpost.com/news/wonk/wp/2016/12/12/the-radical-new-map-that-would-really-reflect-life-in-the-u-s/?utm\_term=.99a4522ac165**

To map out these mega-regions, the researchers used the volume of commuter flow between locations as a proxy for the economic connection between two areas. For example, in the map below of the San Francisco Bay area, longer, lower volume commutes are shown in darker shades of red, while shorter journeys are in lighter shades.

The map shows that San Francisco, Oakland and Sacramento are all main employment centers, as well as Stockton, Modesto and Santa Rosa. It also shows that commutes and living arrangements broadly connect the area into an economic mega-region.

The researchers then used an algorithm to identify the best boundaries to 50 economic communities. That’s how they created the map below, showing what our 50 states might look like if they were redrawn today based on economic connections:

**From https://en.wikipedia.org/wiki/Laurentide\_Ice\_Sheet**