MAPPING RACIAL DIVERSITY USING GRID-BASED RACIAL DOT MAPS AND RACIAL DIVERSITY MAPS

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HI-RES GRIDS

Dot maps based on

the tract data show

people perfectly

mixed and living

throughout the

The tract 6607.01 in

the Brazoria County,

TX is located in urban

environment. As there

is no extensive

similar, but not

uninhabited areas,

the diversity maps

and dot maps show

entire tract.

ETHNO-RACIAL GEOGRAPHY

Mapping spatial distribution of racial segregation and/or diversity is of keen interest in the American society. As attention has recently turned to spatial analysis, the issue of how to design maps to best depict racial distribution becomes increasingly important. While some maps serve as visualizations, other also double as datasets for quantitative spatial analysis of racial distribution within a city.

Majority of maps illustrating demographic data are choreploth maps. They divide a study area into U.S. Census aerial agglomeration units (for example, tracts) and color these units to depict spatial variability of a demographic variable (for example, the percentage of a given race, or a racial diversity category). Choreploth maps suffer from low spatial resolution and from the modifiable areal unit problem (MAUP). They are also restricted to the visualization role.

High resolution grids, like those provided by the SocScape project at http://sil.uc.edu, have higher spatial resolution, don't suffer from the MAUP, and double as data which is in the format that allows for a more thorough spatial analysis then the original census data does.

This goal of this poster is to popularize hi-res grids for use in racial segregation/diversity research. We show a series of examples featuring comparisons between maps obtained on the basis of census units and maps obtained on the basis of hi-res grid. By examining these examples the advantage of using hi-res grids becomes clear.

HOW TO MAP RACIAL SEGREGATION AND DIVERSITY?

CENSUS BASED MAP

Spatial distribution of race percentage maps

A map showing the spatial distribution of the percentage of people of a given race. The hi-res version of the map has clearly a better spatial resolution, but, at the scale of the entire city, both maps convey the same message.

Such map can illustrate a distribution of a single race/ethnicity group at a time; to show the racial composition of a study area the set of percentage maps is required.

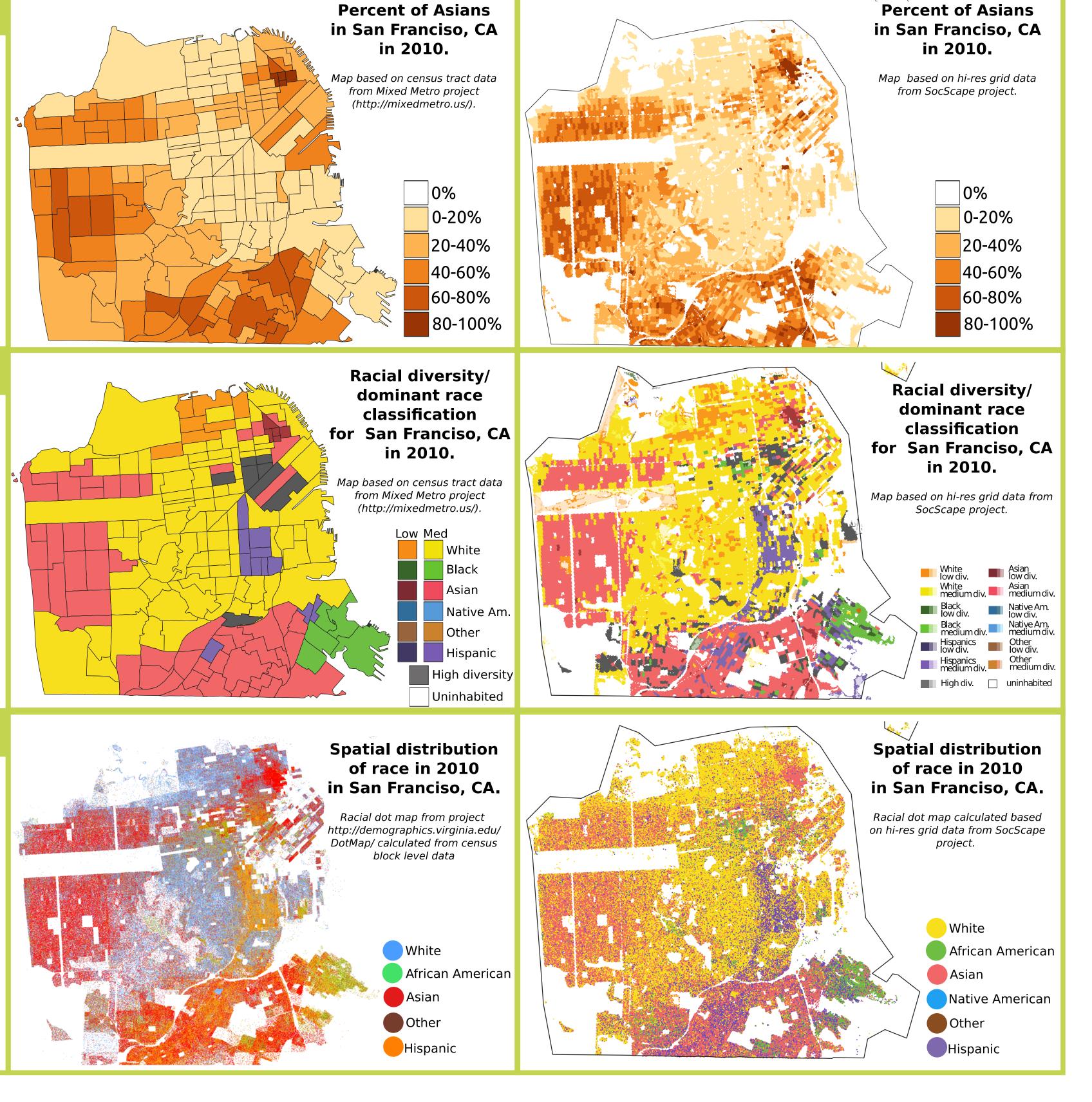
Diversity/dominant race category map

character of map showing spatial neighborhoods in single, easy-tounderstand map. Each category, depicted by a color, codes the level of diversity and a dominant race.

Such map conveys most important information about racial geography but it only indicates a dominant race leaving identities of minority races unknown.

Racial dot map

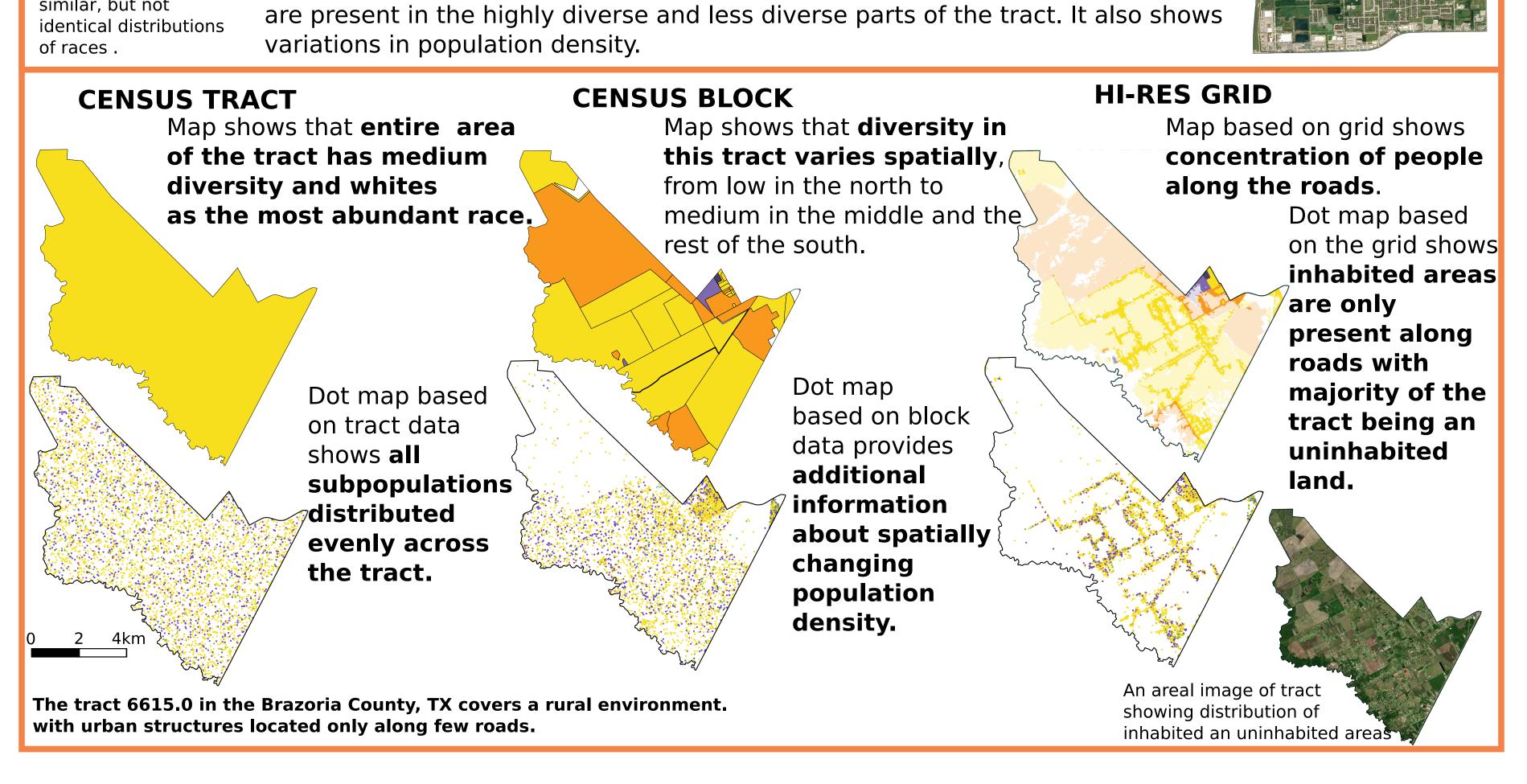
In the racial dot map each person in the mapped area is represented by a dot. The dot is placed as close to the person place of residence as the data allows for and its color represents person's race. Thus, a dot map conveys spatial distribution of population density and the full racial composition in a single map. In the block-based map dots corresponding to people inhabiting a given block are placed randomly within this block, whereas in the grid-based map dots are placed in a grid cell. The difference is clearly visible when investigating areas smaller than the entire city.



UNCOVER SUB-TRACT RACIAL DISTRIBUTION **HI-RES GRID CENSUS TRACT CENSUS BLOCK** Diversity/dominant Diversity/dominant Diversity/dominant race map based on race map based on race map based on the grid **shows** the tract data the block data shows segregation as well indicates that the that this **tract is** as the fact that the actually racially entire area of the large portion of this segregated with the tract has medium tract is uninhabited. diversity and majority of black whites as the most population living in the abundant race. southern part of the tract and white Dot map based on gridded data shows population living in the central and eastern most accurate Dot map based on parts of the tract. location of different tract data shows all subpopulations. subpopulations Dot map based on distributed evenly block data provides across the tract. additional 0 200 400 m information about spatially changing African American population density. The tract 008400 in Cincinnati, Hamilton County, OH is located in Native American the urban environment but is adjacent to a park as is revealed by An areal image of tract its aerial image, so only portions of the tract are inhabited. inhabited an uninhabited area **CENSUS TRACT CENSUS BLOCK HI-RES GRID** Diversity/dominant Diversity/dominant race map based on race map based on the the tract data grid shows **the** indicates that the presence of uninhabited areas entire area of the tract has high within this tract. racial diversity. 0 0.5 1km It also helps to make

the dot map more

accurate.



Diversity/diminant race map based on the block data shows a more complicated

racial geography with parts of the tract indeed racially diverse and other

parts more dominated by a single races. Dot maps shows what specific races