REDLINING AND DE FACTO SEGREGATION

A Web-based, Geospatial Visualisation

April 10, 2018

Joe Steele
Parsons School of Design
Data Visualization MS

Contents

Abstract

There persists in America an embedded network of institutional factors contributing to unequal social outcomes. Before and beyond any specific instances of explicit, personally-directed hate, are historically-defined patterns of disenfranchisement, operating outside the purview of the public sphere. Nowhere is the historic character of such institutions more apparent than in the context of wealth accumulation and distribution. A single arc can be traced from 19th century land endowment to ensuing 20th century credit discrimination, and forward to the perverse contemporary state of de facto segregation.

Compounding the issue of discursively challenging institutional structures are broad misconceptions on their character and import. When conversations are allowed to focus around only the most explicit and literal instances, it enables all else to be hand-waved away with only vague dismissals; premises are hidden and rhetoric is elevated. In public discourse, then, value can be added through direct, concise, and easily-interpretable representations of typically oblique content.

The particular case of historic redlining is a distinct candidate for such visual representation; the practice itself involved systematically denying both public and private services to neighbourhoods, based on their racial profiles. Given the clear geospatial nature of redlining and the relevant data, an opportunity exists for a graphical argument to be made on its sustained impact[1].

Introduction

Context

> *Those (free blacks) who are shop keepers earn a moderate living but never expand their businesses beyond a certain point. The simple reason is that... the whites, who have the money, are not willing to lend to a Negro the capital necessary for a big commercial establishment.* -Jacques Pierre Brissot de Warville, *Travels in the United States, 1788*

The patterns of wealth distribution in this country were settled not long after its inception. While newly unrestricted land was given away, quite literally, to white frontiersmen via the Land Runs and Homestead Acts of the 18th century, a broad manifold systematically denied minority populations the ability to accumulate wealth- not only by the explicit bondage of slavery, but by systemic disinvestment in free states as well. Even ostensibly 'free' individuals still faced "occupational, legal, and de facto" segregation. Today, 98% of American land is owned by whites- and the average black family in America possesses 13 times less wealth than their white counterpart. These patterns were set centuries ago- but it has taken self-perpetuating, institutionalised efforts to sustain them.

The Home Owners' Loan Corporation (HOLC) was created in 1933. Conceived as part of Franklin Delano Roosevelt's New Deal, the firm's ostensible purpose was to underwrite and refinance mortgages in default. In the process of selecting defaulting loans to refinance, the HOLC drew Residential Security Maps- delineating areas considered to be high-risk for underwriting, according to certain criteria:

> *The appraiser who went to Brooklyn in the 1930s to assess Bedford-Stuyvesant for the government summarized the neighborhood's prospects on a single page. Many brownstones in "obsolescence and poor upkeep". Clerks, laborers and merchants lived there, about 30 percent of them foreign-born, Jews and Irish mostly. Also, this: "Colored infiltration a definitely adverse influence on neighborhood desirability."* - Emily Badger, *New York Times*

The borders and boundaries drawn by the HOLC predated the firm's existence- often by decades. But by providing an explicit schema to continue disinvestment along their lines, their effects were reinforced at a systemic level.

Audience and Users

The primary discursive problem on this topic concerns the presence of a certain perception gap. I.e., despite a body of literature attesting to the presence of implicit and institutionalised biases and discrimination[2], public opinion is still split on their existence, particularly along racial and gender lines[3]. Even among those who accept the persisting effects of racial discrimination will often tend to deflect considerations on their own involvement, intentional or not. This leaves a niche for a particular kind of argument to be provided in public discourse within this domain- a single point, made concisely and repeatedly[4]. The academic support and context is such that effective action can be made in communicating the content of such research with ease of transmission/interpretation and user experience in mind. This directly informs the intended audience of this project; everyone would stand to gain from a fundamental understanding of redlining's direct effects.

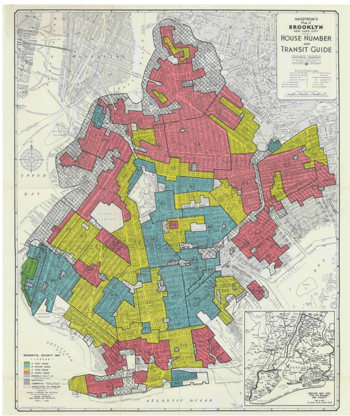
Definitions, Acronyms, and Abbreviations

TREATMENT

Data Sources

HOLC Maps

The most concrete data which exists for 20th century redlining are the HOLC neighbourhood mappings, created in the 1930's to provide federal guidance on mortgage underwriting. In practice, the surveyors in charge of determining the boundaries often did so according to conceptions of racial desirability.



US Census Tract Demographics

An obvious overlay to create atop the original maps would be demographic and ethnic data by area, collected at a granular enough level to allow for easy visual comparisons with the redlining polygons. These requirements would appear to be satisfied by U.S. census data from various points over the past century- aggregated and analysed at tract level.

Housing Market Data

In addition to the demographics data, another point of comparison could be drawn to summary statistics on real estate and housing market data, corresponding again to the neighbourhood level. For this case, a seemingly-appropriate option for up-to-date information would be Zillow's public API, which provides support for requests on mortgage statistics, real estate values, neighbourhood delineations, etc.

Contemporary Loans and Mortgages

The continued significance of historical redlining can most directly be represented through the simultaneous mapping of contemporary data on mortgage and loan approval rates, and geographic density of the institutions which supply them. The former can be achieved through aggregating Home Mortgage Disclosure Act (HMDA) records, which are convenient collected at the census tract level and track loan and mortgage applications, type, denials, in addition to a manifold of supporting metrics and nominal statistics. The most recent set of these records pertains to 2016 activity, and is based off of the 2010 census tracts.

NPR Polling Data

Beyond the component data sources listed above, the project's higher-order raison d'Ãłtre can be summarised by a series conducted by National Public Radio over the course of 2017, on "Experiencing Discrimination in America". Most relevant to our problem domain, are the polls therein demonstrating a majority opinion among white Americans believing themselves to be discriminated against, and a general disbelief in the capacity for institutional factors to impact discrimination. The series' insights are to be introduced to the end product as contextualising, lead-in information for the funnel visualisation, ending in the map exploration view.

Data Methods

The span of data aggregated and displayed for this project is predominantly quantitative-either .shp and geoJSON files for base map layers, or tabular data, to be parsed and subsequently represented within the map tiles as points, or as polygons themselves.
Conveniently, the HOLC maps have recently been made publicly available by the University of Richmond as digitised geoJSON polygons, allowing for convenient, web-based projection, through tools such as Mapbox.
Similarly, Zillow's public neighbourhood boundary data for the USA exists in ERSI shapefile format, which can fairly easily be converted into the more appropriate geoJSON format through CLI tools.
The relevant demographics data from the U.S. Census Bureau is available at a local level in .csv format, divided by census tract. In order to maintain similitude with other data sources, metrics from the 2010 census will be used.
The Federal Financial Institutions Examination Council (FFIEC) provides access to HMDA-related data on their website, either in the form of raw files (parsable only by machines

running Windows operating systems), or through an end user-facing interface, which can be queried to export subsets of the overall dataset. The most recent mortgage data, from 2016, is grouped according to data from the 2010 census.
The top-level results from the NPR series of polls are available through their website, as are more detailed tables and discussions of methodology in a series of supporting research papers, available for download.

Credit and Wealth Discrimination in America

[Decision to be made between social science academia/public policy contexts]

The basic credit and finance environment which developed in an industrialising America was always defined in some way by certain discriminations and exclusions. Larger structures of slavery and occupational/legal segregation largely prohibited wealth generation- compounded by the fact that even were an individual successful in getting a business off the ground, surviving in hostile white markets was itself an unlikely prospect.[6]

As the finance sector grew increasingly essential to the nation's ability to weather the harsher lows of the industrial business cycle, and to the success of the economy overall, the ability for black populations to participate in the market economy was curtailed by both explicit legal restrictions and recurring social patterns. In the slave-holding South, blacks were prohibited from owning stock or land; in the North, even wealthier black individuals were often labeled as credit risks, through reports which placed heavy focus on "character" concerns. Such prohibitions lead to a self-perpetuating cycle of segregation, as black markets collectively reacted to the exclusions by concentrating efforts to develop in more receptive black communities.

These patterns of discrimination coalesced into systemic mortgage redlining over time- particularly as the American population grew more heterogeneous, precipitating racial tensions among the working class, and greater competition in the housing market. As early as the 1910's, metropolitan communities and municipal boards in America were noting redlining tendencies in the banking and financial sectors. In Chicago, 2 years before the Race Riot of 1919, the *Cleveland Advocate* reported on banks' unwillingness to extend loans to black communities for mass-scale development; 3 years after the riot, a municipal commission formed in response affirmed the housing discrimination faced by black Americans- taking shape across neighbourhood lines.

Home Owner's Loan Corporation (HOLC)

It is against this backdrop of loosely-defined marginalisation that the Home Owner's Loan Corporation was conceived.

Indeed, the ensuing decade saw only more pronounced recognition of the sustained barriers in place within credit markets.

Urban Renewal

References

1. Daniel Aaronson , Daniel Hartley , Bhash Mazumder. *The Effects of the 1930s HOLC Redlining Maps .
2. Bradford, Calvin, and Dennis Marino. *Redlining and disinvestment as a discriminatory practice in residential mortgage loans*. Washington, D.C.: Dept. of Housing and Urban Development, Office of Assistant Secretary for Fair Housing and Equal Opportunity, 1977.
3. Squires, Gregory D. *From redlining to reinvestment: community responses to urban disinvestment*. Philadelphia: Temple Univ. Press, 1992.
4. Immergluck, Daniel. *Credit to the community: community reinvestment and fair lending policy in the United States*. Armonk, NY: Sharpe, 2004.