Ground-Truthing: Geographic Information Systems (GIS) as Community-Based and Anti-Racist Praxis

Presented to:
Resistance GIS Conference
Portland State University

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March 20, 2017
GeoSpatial Analysis & Educational Inquiry

- **Opportunities to Learn (OTL)**
  - Challenges the sole use of student outcome indicators
  - Focuses on the inequitable distribution of educational resources and access to knowledge across space
  - Uses GIS to visualize distribution patterns and share findings with schools, parents, youth, and community organizations

- **Geography of Opportunity**
  (Tate, 2008, 2011, 2012)
  - Opportunity structures that systematically pattern how children of different backgrounds come to reside in different environments
  - GIS as a visual political literacy project
Mapping Educational (In)Opportunity in Pasadena Unified

How does geography influence educational opportunity for Latina/o students and families?

a. In Pasadena Unified, is there a relationship between where Latina/o students live and the types of opportunities they are afforded in schools? If so, what does that relationship look like?

b. What do these findings reveal about the quality of schools in predominantly Latina/o neighborhoods?
Demographic Changes in the Latina/o Population:  
*Pasadena Unified School District 2010*

Northwest Pasadena: Predominantly Latina/o Neighborhood
Children Ages 5-18 residing within PUSD
Where do the white children go to school?

Population Density of Latina/o Children Ages 5-18 by 2000 Census Tract

Population Density of White Children Ages 5-18 by 2000 Census Tract

0% - 25%
25% - 50%
50% - 75%
75% - 100%

Pasadena Unified School District Attendance Boundary
Los Angeles County Census Tracts 2000
Northwest Pasadena
Northwest Pasadena: Significant Hot Spot of Poverty

Topography of Pathology

"... singled out the family unit as the transmitter of deficiencies . . . The family unit – mother, father, home environment – [is] pegged as the carrier of the pathology."

(Pearl, 1997, p. 133)
Distribution of Students from Northwest Pasadena
Public & Private Schools within PUSD
How do they compare by location & quantity?

82 Private Schools
25 Public Schools
Public & Private Schools within PUSD
How do they compare in terms of white student enrollment?

93% of Private School Students
14% of Public School Students
69% of Pasadena’s private schools were founded between 1964-1976.
Comparison of Latina/o & White Student Enrollment
Selected GATE Programs

2010 Proportion of White & Latina/o Enrollment

% White
% Latina/o

Pasadena Unified School District Attendance Boundary

Los Angeles County Census Tracts 2010

Created by: Veronica Velazco
Source: ESRI, Census Data 2010
Pasadena Unified School District
2006 Comparison of Latina/o & White Student Enrollment
Pasadena Unified High Schools

2006 Proportion of White & Latina/o Enrollment

- % White
- % Latina/o

Pasadena Unified School District Attendance Boundary

Los Angeles County Census Tracts 2010

Created by: Veronica Vela
Source: ESRI, Census Data 2010
Pasadena Unified School District
A Working Definition of Critical Race Theory in Education

Critical race spatial analysis (CRSA) is an explanatory framework and methodological approach that accounts for the role of race and racism in examining geographic and social spaces and that works toward identifying and challenging racism within these spaces as part of a larger goal of identifying and challenging all forms of subordination.
A Critical Race Spatial Analysis Framework in Education

1. *Foregrounds the color-line*, underscoring the relationship between race, racism, history and space, its intersection with other forms of subordination, and its material and perceived impact on the daily lives of Students of Color, their families, and their communities.
W.E.B. DuBois on Geographic Color-lines

“It is usually possible to draw in nearly every Southern community a physical color-line on the map . . . The winding and intricacy of the geographical color-line varies, of course, in different communities. I know some towns where a straight line drawn through the middle of the main street separates nine-tenths of the whites from nine-tenths of the blacks. In other towns the older settlement of whites has been encircled by a broad band of blacks; in still other cases little settlements or nuclei of blacks have sprung up amid surrounding whites.”

(Du Bois, 1903, The Souls of Black Folk, p.106-107)
2. **Challenges race-neutral representations of space** by exposing how racism operates to construct space in ways that limit educational opportunity for Students of Color, their families, and communities.
A Critical Race Spatial Analysis Framework in Education

3. Focuses research, curriculum, practice, and activism on “mapping” the spatial expression of the \textit{lived experiences of Students of Color, their families, and their communities} and constructs a socio-spatial narrative that portrays these experiences as sources of strength.
**Ground-truthing in CRSA**

*Ground truthing* is the process of sending community members to gather data in the field that either complements or disputes information portrayed in maps. Ground truthers, employing their expertise as community members, define and verify neighborhood boundaries, "color-lines," the uses of certain spaces, and the perceptions of those spaces. From this data, critical cartographers are able to identify social-spatial characteristics of a particular area and compare it to what is shown on the image. They then verify and update existing data and maps to reflect community cultural wealth.
Ground-truthing in CRSA

Ground truthing is a way of looking at an entire neighborhood, school district, public transit system, park access and placement, or any number of resources (or lack thereof) in a community and understand many of the realities involved. With our present community expertise, we can measure an entire system of distribution of educational and community resources and understand its capacities and impact on a region and decision-makers' positive or negative influence.

*Without ground truthing verification, our data from supposed "accurate" or "objective" sources is hypothetical at best.*
4. Offers a *transformative solution* by investing in and often re-imagining “spatial” research and teaching tools that work for racial justice and expands the reach and use of these tools to eliminate subordination in and beyond the academy.
A Critical Race Spatial Analysis Framework in Education

5. Utilizes the *transdisciplinary knowledge base* of critical race studies in education (ethnic studies, women’s studies, sociology, history, humanities, and the law) as well as visual sociology, critical geography, and radical/tactical cartography to inform praxis.
A Critical Race Spatial Analysis Framework in Education

6. Emphasizes maps and map-making as a point of departure for analyzing the socio-spatial-historical relationship between race and space and refuses to allow maps to speak for themselves.
Thank You

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