Environmental Justice and the Urban Forest

Georgia Urban Forestry Council Meeting
2 November 2016
Cassandra Johnson Gaither
What is environmental justice?

“Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

Environmental Protection Agency
2 aspects of environmental justice

- **Distributive justice**
  - *fair and equitable siting*
  of both environmental burdens and amenities across society

- **Procedural justice**
  - *meaningful inclusion*
  of poor and minority citizens *in decisions*
  about the distribution of environmental burdens and benefits
3 Ways Environmental Justice Displayed

- Social movement
- Academic investigations
- Public policy
Social protest: waste disposal

Warren County, NC—1982 origins of environmental justice social protests. State selected a small, poor, mostly black community for toxic waste disposal site that would receive PCB-contaminated soil.

County leaders invoked civil rights activism to draw attention to siting problem.
Academic studies

U.S. General Accounting Office 1983 report found 3 of 4 communities in EPA region 4 (South) with hazardous waste landfills were in black communities.

In all 4 communities with landfills, 25% or more of population below poverty.

United Church of Christ 1987 report found that 60% of Black and Hispanic Americans lived in communities with hazardous waste sites.

Studies show urban Black kids more likely to live in polluted environments which increases asthma risks.

Photos courtesy of www.visionproject.org Less Stone
Public policy

- **Executive Order 12898**: President Clinton 1994

  - Federal agencies: “shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

  - Federal agencies directed to develop agency-wide environmental justice strategies and to “identify differential patterns of consumption of natural resources among minority populations and low-income populations.”
Environmental Justice expands

- Access to environmental amenities
  - Urban Green Spaces
EJ and Urban Green Space Studies

- **Milwaukee**: Urban tree canopy located disproportionately more in White, upper income districts.

  Latino residency was negatively correlated with amount of both public and residential tree canopy (Heynen, Perkins, & Roy, 2006).

- **Baltimore**: Boone et al. (2009) found a higher number of Blacks, compared with Whites, were within walking distance of city parks, but parks in majority Black districts had higher park congestion.

- **Nationwide 409 communities**: Communities with higher percentages of Black households had fewer parks and green spaces (Powell, Slater, & Chaloupka, 2004).

- **7 major U.S. cities**: Negative correlations between race and urban tree canopy for some cities, but this disappears when accounting for other covariates (Schwarz, 2015).
EJ and Urban Green Space in ‘Not So Big’ and Big Places

Hall County, GA:
- 2015 population: 193,535

City of Atlanta
- 2015 population: 463,878
Gainesville Tornado, April 1936

Newtown --1937
- Pop.~300
- 0.076 square miles

Industries near neighborhood since 1950

1990 Newtown Florist Club challenges city zoning authorities, citing neighborhood cancer & lupus deaths
Chemical incidents in 1990s

- 1990/1992  Sulfuric acid spill—Cargill
- 1995  Hexane air release--??
- 1992/1995  Flat Creek

Environmental Assessments

- 1990  Cancer study (GA DNR)
- 1993  Landfill study (GA DNR)
- 1994  Landfill study (UGA)
- 1997  Lupus study (Emory University)
- 2001/02  Public Health (ATSDR)

Mixed Results
Is Hall County EJ only a ‘black problem’?

- Environmental justice in Hall County framed as ‘black’ problem involving toxins.

- Hall County Latino population:
  - 1990: 5%
  - 2000: 20%
  - 2010: 26%

- 2010 Gainesville Latino population 41%

- No consideration of Latino exposure to industry or any population group’s proximity to green spaces.
<table>
<thead>
<tr>
<th>CBG’s &amp; Industry</th>
<th>Pop.</th>
<th>Square Miles</th>
<th>TRI/1k pop.</th>
<th>TRI Ind./Sq. Mile</th>
<th>Car./1k pop.</th>
<th>Car./Sq. Mile</th>
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<tbody>
<tr>
<td><strong>Black N=4</strong></td>
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<td>Industry</td>
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<td><strong>Latino N=13</strong></td>
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<td>Industry</td>
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<td>36.06</td>
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<td>Industry</td>
<td>58</td>
<td>128,977</td>
<td>366.00</td>
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<td>Car.</td>
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<td><strong>Hall County</strong></td>
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<tr>
<td>Industry</td>
<td>101</td>
<td>179,684</td>
<td>392.78</td>
<td>0.13</td>
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Toxics Release Inventory (TRI) data are reported for industries that manufacture or process in excess of 25,000 pounds or use more than 10,000 pounds of an identified toxic chemical annually.
## Parkland Acres per 1,000 Population and per Square Mile: Hall County Census Block Groups

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Sq. miles</th>
<th>Parkland acres</th>
<th>Parkland/1k pop.</th>
<th>Parkland/sq. mile</th>
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<tr>
<td>Black N=4</td>
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<td>2.68</td>
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<td>White N=68</td>
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<td>7,558.07</td>
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<td>20.65</td>
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<td>Hall County</td>
<td>179,684</td>
<td>392.78</td>
<td>8,069.28</td>
<td>44.91</td>
<td>20.54</td>
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</table>
Environmental Injustices in Hall County Park Distribution??

- Parkland Per Capita

  - Acreage in communities with a higher Black presence is well below the recommended amounts by the National Recreation and Park Association (6.25 to 10.5 per 1,000 residents).

  - Amount in majority Latino CBGs is within the upper bound of recommended acreage by the NRPA, but far below the typical acreage available in Hall County neighborhoods with high White concentrations.

  - For county as a whole, 44.91 acres were available per 1,000 residents, which far exceeds the NRPA’s recommendation.
“Trees and Trash”: Environmental Justice and Atlanta’s Urban Forest
Atlanta: “City in a Forest”

- City has 47.9% canopy cover
  (GA Tech Center for Quality Growth and Regional Development 2008)

- In-migration of middle class from suburbs
- Increasing demand for in-town housing
- Established Atlanta neighborhoods
• **Distributive justice:**
  - How is the urban forest distributed across the city?
    - i-tree eco
    - i-tree canopy

• **Procedural justice:**
  - How do local people participate in the creation of the city’s urban forest?
  - How might people’s engagement be influenced by social stressors associated with local spaces?
    - Procedural justice survey
Atlanta Procedural Justice Survey

• Door-to-door survey of 700 residents

• Survey includes
  • Procedural Justice scale
  • Contextual analysis

• Preliminary analysis: response rate 56%
• Completed in August 2016
• Data analysis ongoing
Procedural Justice Scale  (Cronbach’s Alpha= 0.80)

Household Efficacy

1. Someone in my household spends a lot of time caring for trees.

2. At least one member of my household feels that it’s important to personally care for neighborhood trees.

3. Participating in environmental cleanup activities in this neighborhood is important to the people who live in my home.

4. People in my household are very interested in increasing the number of trees we have in this neighborhood.

5. No one in my household is interested in personally caring for neighborhood trees.

6. No one who lives here knows how to get involved with neighborhood improvement groups.

Morehouse student collects data for household survey.
**Procedural Justice Scale** (Cronbach’s Alpha= 0.80)

**Community Efficacy**

1. I see a lot of people caring for trees in this neighborhood.

2. Residents in my neighborhood work with tree experts to help decide what kinds of streets trees the city should plant in this neighborhood.

3. The city council representative for this district is interested in preserving neighborhood trees.

4. My community is connected with other communities across the city that are concerned about preserving trees in Atlanta.

Morehouse students collect data for household survey.
Neighborhood Context Matters

“360° Trash Analysis”

- Dumped garbage
- Litter
- Dilapidated houses
- Discarded furniture
- Dumped tires
- Junked autos
- Graffiti
- Boarded up houses
- Discarded shopping carts

“Illegal dumping the focus of new lawsuit against Atlanta” Atlanta Journal-Constitution, Sunday, Nov. 1, 2015
Neighborhood context matters

“I’m in a running group and we were talking about runs in Southwest Atlanta. We had a whole discussion about…Cascade Nature Preserve and, I promise you, you can talk to people who go up and down Cascade [Road] every single day…I promise you 90 percent of them …don’t even know it’s there… I made it a point to go running there [Cascade Nature Preserve] once and, you know, my aunt is retired so sometimes she’ll walk there, but even out of my family who’s been around this community for 50 years, we’re the only two that I know for sure have been in there.”

“Where the sidewalk ends”: examining the potential for Climate change mitigation in Atlanta’s Cascade community. City and Society, 28(2):174-197.

Field trip to Cascade Springs Nature Preserve
Sponsored by West Atlanta Watershed Alliance 2009
Cascade Springs Nature Preserve
Neighborhood context matters

“...when you look at some of these communities like Peyton Forest and Audubon Forest [Cascade subdivisions], it's really a natural forest in Southwest Atlanta; and we have tons of public parks in Southwest Atlanta….The unfortunate thing [is that] because the area is predominantly African American, those natural resources aren’t leveraged as high....In other areas...when you focus [on] any neighborhood where it has a park...like Piedmont Park, you know, a home in that area would be four or five hundred thousand [dollars]. But I can take you to Oakland City Park where you have...boarded up houses right in front of it.

"Where the sidewalk ends": examining the potential for climate change mitigation in Atlanta’s Cascade community. City and Society, Forthcoming.
5 City Areas

- Affluent North
- Rising Westside
- In-town East
- Historic Southwest
- Forgotten Southeast
City Area Socio-Demographics

- Calculated socio-demographics for 5 city areas
  Mean--
  - % child poverty
  - % black
  - % white
  - % Asian
  - % Hispanic
  - % vacant housing
# City Area Socio-Demographics

<table>
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<tr>
<th>(census tracts)</th>
<th>Pop.</th>
<th>Mean Pop. Density</th>
<th>Mean % child poverty</th>
<th>Mean % white</th>
<th>Mean % black</th>
<th>Mean % Asian</th>
<th>Mean % Hispanic</th>
<th>Mean % Vacant Houses</th>
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<tbody>
<tr>
<td>Affluent North (N=27)</td>
<td>122,328</td>
<td>4,215</td>
<td>9.36</td>
<td>71.99</td>
<td>10.75</td>
<td>5.61</td>
<td>9.72</td>
<td>15.86</td>
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<tr>
<td>Gentrified East (N=49)</td>
<td>176,851</td>
<td>6,589</td>
<td>25.64</td>
<td>54.85</td>
<td>32.85</td>
<td>4.92</td>
<td>4.90</td>
<td>14.79</td>
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<td>Forgotten Southeast (N=27)</td>
<td>87,910</td>
<td>3,381</td>
<td>48.35</td>
<td>12.39</td>
<td>77.57</td>
<td>1.19</td>
<td>7.2</td>
<td>28.10</td>
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<tr>
<td>Rising Westside (N=25)</td>
<td>67,171</td>
<td>3,971</td>
<td>51.19</td>
<td>6.76</td>
<td>87.60</td>
<td>1.12</td>
<td>4.86</td>
<td>30.40</td>
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<tr>
<td>Historic Southwest (N=22)</td>
<td>105,985</td>
<td>3,068</td>
<td>50.27</td>
<td>2.46</td>
<td>91.56</td>
<td>0.31</td>
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U.S. Census Bureau, American Community Survey 2009-2014
<table>
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<tr>
<th>(census tracts)</th>
<th>Household Efficacy</th>
<th>Community Efficacy</th>
<th>Procedural Justice</th>
<th>360° Analysis</th>
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<tbody>
<tr>
<td>Affluent North (n=56)</td>
<td>0.29 (0.90)</td>
<td>0.11 (0.83)</td>
<td>0.40 (1.56)</td>
<td>0.09 (0.28)</td>
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<tr>
<td>Gentrified East (n=56)</td>
<td>0.24 (0.81)</td>
<td>0.33 (0.70)</td>
<td>0.57 (1.24)</td>
<td>0.34 (0.69)</td>
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<tr>
<td>Forgotten Southeast (N=35)</td>
<td>-0.15 (0.85)</td>
<td>-0.05 (0.81)</td>
<td>-0.20 (1.49)</td>
<td>1.05 (1.56)</td>
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<td>Rising Westside (N=44)</td>
<td>-0.34 (0.93)</td>
<td>-0.38 (0.91)</td>
<td>-0.72 (1.73)</td>
<td>1.55 (1.82)</td>
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<tr>
<td>Historic Southwest (N=35)</td>
<td>-0.26 (0.79)</td>
<td>-0.17 (0.84)</td>
<td>-0.44 (1.39)</td>
<td>1.14 (1.51)</td>
</tr>
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Procedural Justice Scale: Mean Factor Scores for Procedural Justice Factors (n=226)
Procedural Justice Scale and 360° Analysis (n=226)

- Factor analysis of PJ scale statements
- Supporting HH & CE
- Calculated factor scores for HE, CE, & PJ

Chart showing data for different areas (A. North, G. East, F. Southeast, R. Westside, H. Southwest) with categories for Household E., Community E., Proceed. Justice, and 360°.
Does Trash Correlate with Procedural Justice?

<table>
<thead>
<tr>
<th>Spearman Correlation n=226</th>
<th>360° Trash Indicator</th>
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<tr>
<td>Household Efficacy</td>
<td>r= -0.35</td>
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<tr>
<td></td>
<td>p &lt; 0.0001</td>
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<tr>
<td>Community Efficacy</td>
<td>r= -0.29</td>
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<td></td>
<td>p &lt; 0.0001</td>
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The greater the incidence of illegally dumped garbage and tires, abandoned homes, etc., the lower people’s engagement with the urban forest.
Summary

• Findings are relevant to city’s efforts to “transform” sections of west Atlanta.

• **Westside Future Fund**--Business leaders (Chic-Fil-A, Atlanta Falcons) committed to revitalize west side (i.e., “Rising Westside”)

Two outcomes:

• Green space emphasis is integral to revitalization

• Trash & dilapidation reduced with re-design.

• If dis-amenities reduced, there should be greater engagement by west Atlanta residents with urban forest

• However, there is concern that the transformation, and its accompanying greenspace re-design will displace the poor.
Thanks! Questions??