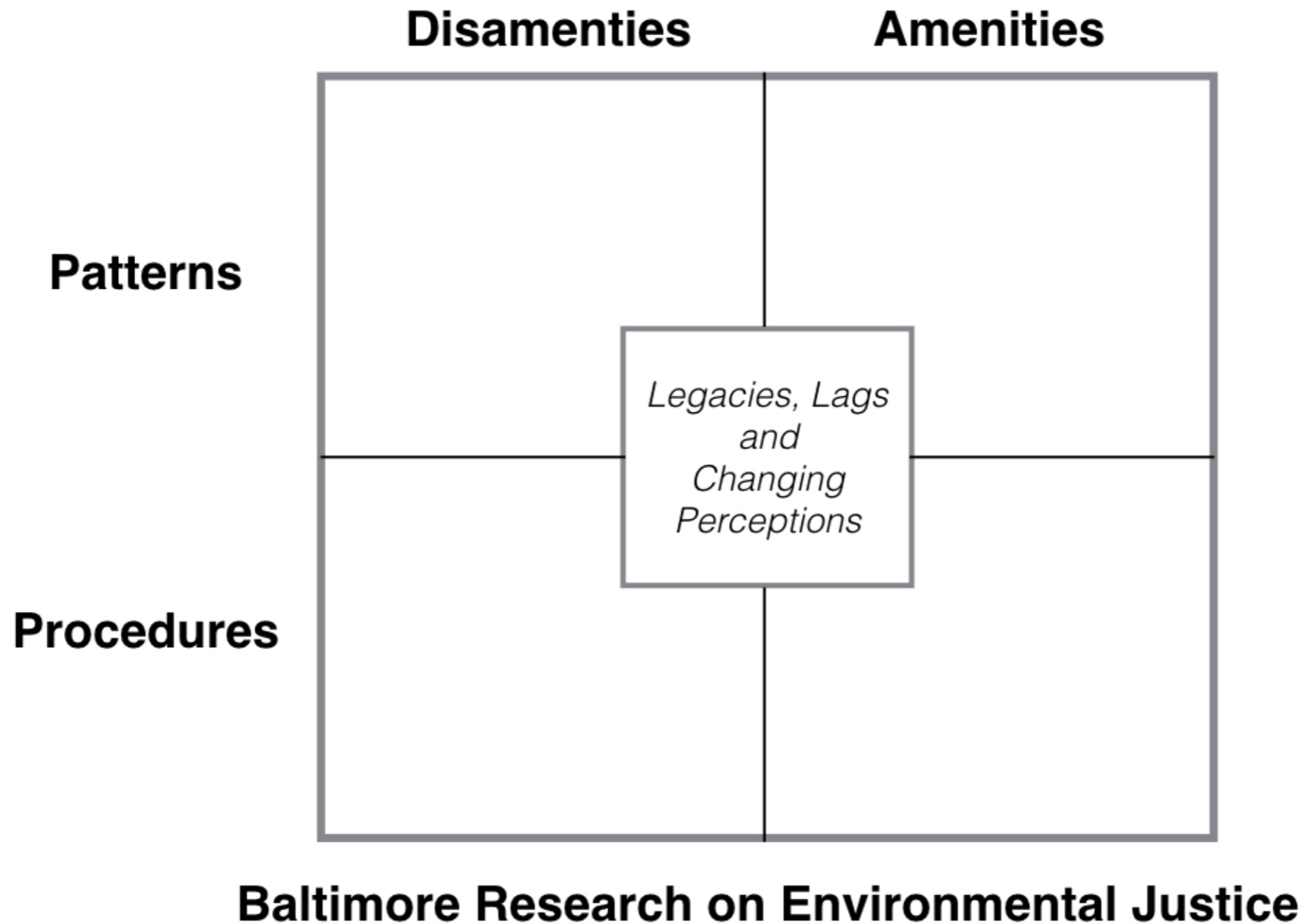# Baltimore Ecosystem Study and Environmental Justice Research

J. Morgan Grove

Baltimore Field Station Team Leader
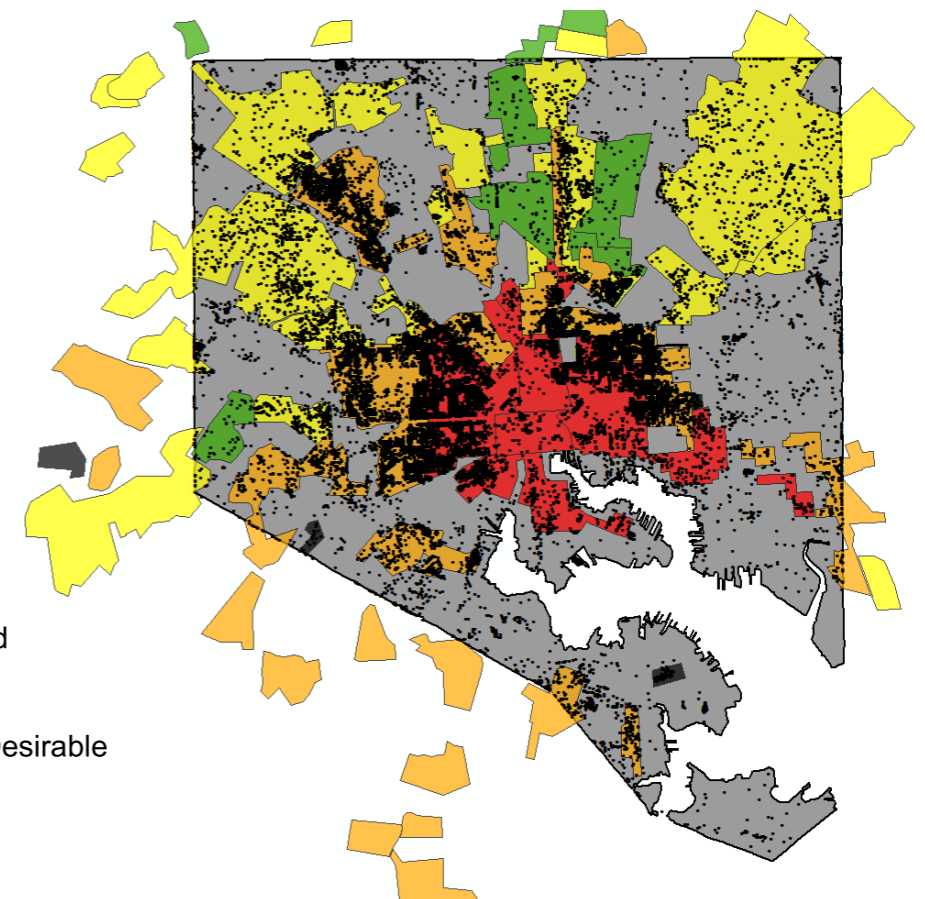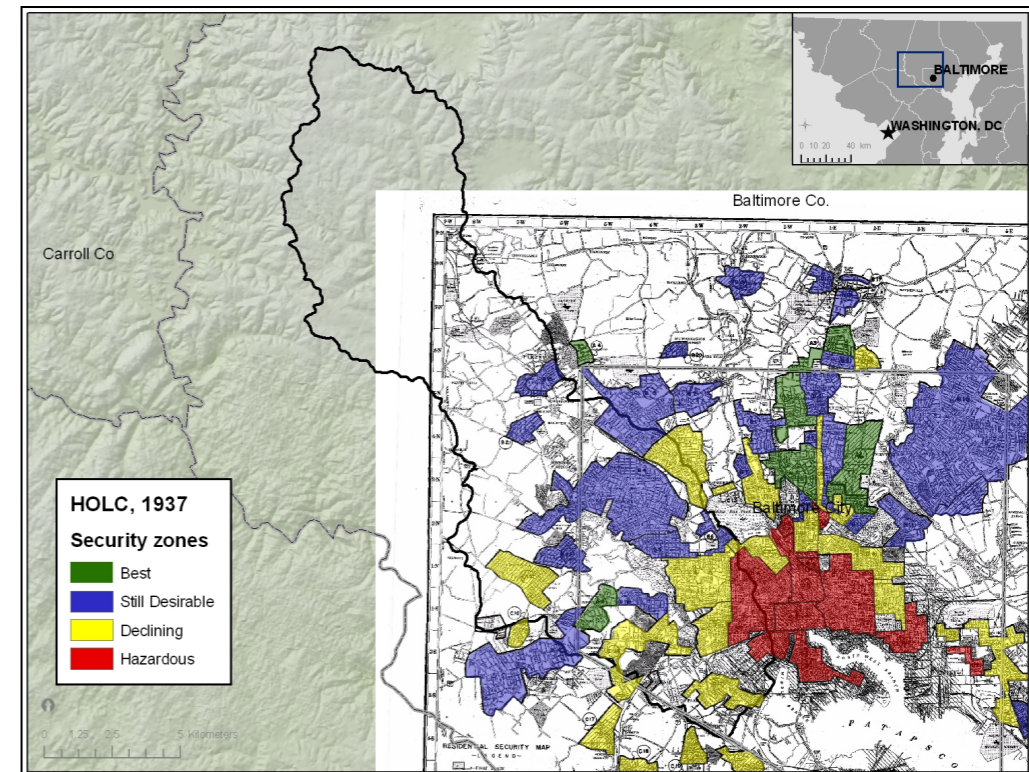
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Organizing Framework

Baltimore Research on Environmental Justice

Patterns and Disamenities

- Land use

  - Toxic Release Inventory (TRI) sites. Legacies associated with residential segregation.

  - Zoning variances

- Vacant lots and houses

  - Legacies associated with HOLC

- Urban Heat Island

  - Canopy and impervious extent and patch size

- Crime

  - Canopy extent and maintenance

- Floodplains

  - Historic stream valleys. Legacies associated with residential segregation.

  - Recent shorelines

- Public health

  - Infant mortality

HOLC, 1937
Security zones
- Best
- Still Desirable
- Declining
- Hazardous

- Ungraded
- -
- B - Still Desirable
- -
- -

Patterns and Amenities

- Canopy Cover
  - Lags associated with inherited landscapes
  - Legacies associated with vacant lots
- Park Access
  - Legacies associated with inherited landscapes
- Park Size
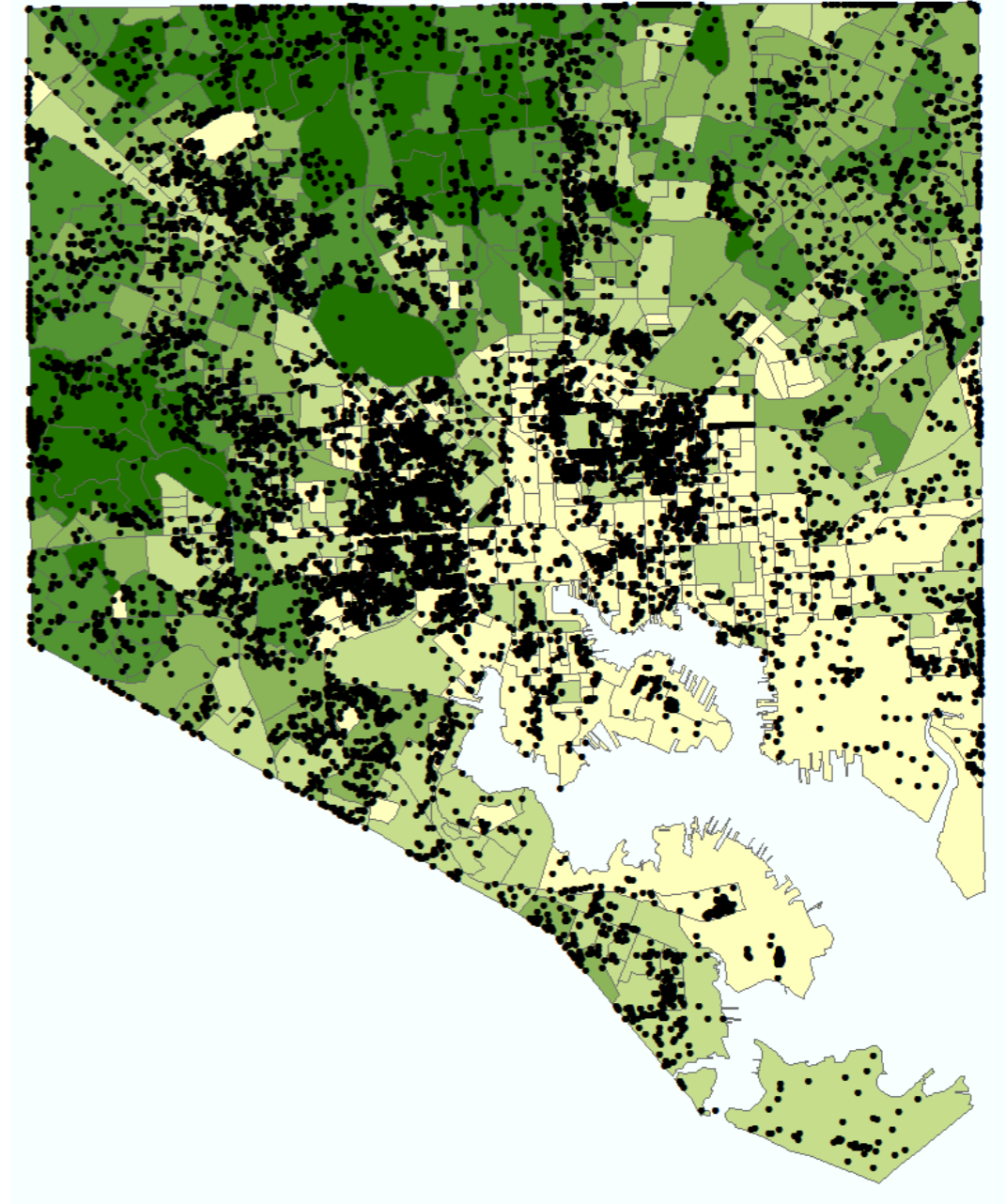
Procedures and Disamenities

- ## Land use

  - Zoning variances: rationale of previous conditions. Legacy of 1937 Home Owners' Loan Corporation (HOLC) redlining.

- ## Park Access

  - Purchase of Leakin Park

  - Desegregation of Carroll Park

Race vs. Zoning Variances:
Disamenity Bias Is Substantial but Declines over Time.

Recreation Opportunities for African-Americans in 1930s

Enoch Barker, "Boys playing a game of checkers on a sidewalk in Baltimore" c.1935-35
http://epfl.mdch.org/u?/mdaa,55

Procedures and Amenities

- Sustainability Initiatives: Tree planting programs

  - Markets, messengers, and messages

  - Conceptions of nature

  - Skepticism of government capacity to maintain

  - Fear of gentrification and displacement (green washing). Relationship between sustainability initiatives, neighborhood desirability, and property values (trees versus energy efficiency).

Odds Ratios & 95% Confidence Intervals for Urban Greening Programs in Baltimore, MD, by Tapestry LifeMode

Legend:
- BCRP Street Trees (2008 - 2012)
- TreeBaltimore/BWB Giveaways (2008 ~ 2012)
- Volunteer Plantings (2008 - 2012)
- Neighborhood Plantings (2008 - 2012)
- 311 Forestry Service Requests
- Blue Water Baltimore, Water Audits Rain Barrels (2008 - April 2013)
- Blue Water Baltimore, Whole Sale Rain Barrels (2007 - May 2013)
- Blue Water Baltimore, Workshop Rain Barrels (2004 - May 2013)
- Existing Tree Canopy (% area)
- Possible Tree Canopy (% area)

Y-axis (left): Odds Ratio (1 indicates expected value based on household distribution)

Y-axis (right): Existing or Possible Tree Canopy (% Area)

X-axis categories: Factories & Farms, Traditional Living, Family Portrait, Global Roots, High Hopes, Scholars & Patriots, Senior Styles, Solo Acts, Metropolis, Upscale Avenues, High Society

Tapestry LifeMode: Demographic groups sharing an experience such as age and/or traits like affluence, lifestyles and/or family structure

Risk and Vulnerability

- Urban heat island. Interacting factors:

  - High **risk** populations: elderly and youth.

  - **Vulnerability** to high risk populations:

  - Residents in low income areas (no air conditioning)

  - High crime (windows closed)

  - Low social cohesion (people looking after each other).

BES IV Hypotheses

- Sustainability Initiatives: Tree planting programs

  - Markets, messengers, and messages

  - Conceptions of urban nature and place

  - Skepticism of government capacity to maintain

  - Fear of gentrification and displacement (green washing). Relationship between sustainability initiatives, neighborhood desirability, and property values (trees versus energy efficiency).

Data

- Landcover (NAIP: 1m)

- Temperature (Aster: 90m)

- Time-series Census (1930 - Present)

- Health records (birth, mortality, illness)

- Archival data: court and property records, meeting minutes, letters, newspaper articles, interviews

- Units of analyses: parcels/address and block groups