Motivations & Mechanisms of Neighborhood Tree Planting

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Background

Why Urban Trees?

Trees in cities provide benefits:

- **Environmental benefits**
  - Shade, energy conservation
  - Stormwater management
  - Air quality improvement
  - CO_2 sequestration/storage
- **Social benefits**
  - Higher property values
  - Public health benefits
    - Lower BMI in kids
    - Lower asthma rates
  - *Community involvement*

Mature Catalpa tree in Ravenswood neighborhood of Chicago.

Tree Planting as Collective Action

In cities, **groups of neighbors may work together to plant trees in their neighborhood,** with the aim of making their neighborhood more beautiful, shady, or obtaining other benefits of trees.

"Collective action"

a group of people responding to a situation or taking action to meet some larger goal

Tree planting is a type of collective action.

High school students with Keep Indianapolis Beautiful planting a street tree.

Research Questions

1. What are the **motivations** for neighborhood engagement in tree planting?
2. What **strategies and mechanisms** do neighborhoods use to organize to plant and maintain trees?
3. How do these motivations & mechanisms relate to **tree success?**

Qualitative Data Analysis

This research is part of a project to evaluate the outcomes of neighborhood and nonprofit tree planting, led by Jess Vogt with a team of researchers originally based at Indiana University. Complete details about larger project at: www.indiana.edu/~cipec/nucfac.

Interviews

- 4 U.S. cities **(Atlanta, Detroit, Indianapolis, and Philadelphia)** with urban greening nonprofits were research partners
- 25 neighborhoods where collective neighborhood tree planting projects occurred were selected randomly in each city
- Names/contact info of neighborhood leaders obtained from nonprofits
- **71 interviews with tree planting leaders and neighborhood leaders** in neighborhoods were conducted in Summer 2014 by grad students working with Jess Vogt's Indiana University-based research team
- Interviews were audio recorded, transcribed, and all personally-identifying information was removed in preparation for analysis

Preparing to Code

- Read through 1 interview per city
- Discussed themes for potential nodes
- Create prelim. list of Parent and Child nodes for NVivo coding (Figure 1).

Discussion during pre-coding

- What is being talked about the most in the interviews?
- Which questions from the interview templates were most relevant?
- What can we immediately eliminate/not focus on?

Coding Using NVivo Software

- **First cycle coding**
  - Relevant references drag-and-drop to Nodes
  - Refined node descriptions
  - Added/deleted nodes as needed
  - Constant discussion with group
  - Figure 2 summarizes results of first cycle coding
- **Second cycle coding**
  - Within one node, sorting references into more detailed groupings (new Child nodes)
  - To **generate relationships between nodes, determine frequencies, and relevant patterns**
  - E.g., Watering (Figure 3)

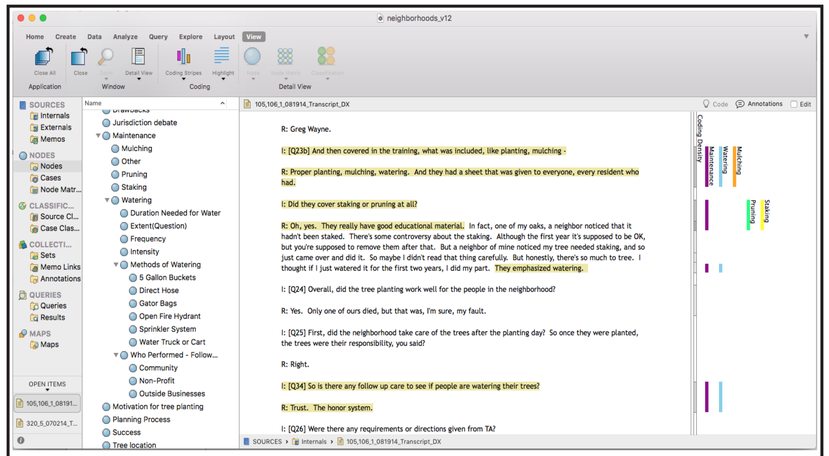

Figure 1. *Coding using the NVivo Software.*

Next Steps

Continue Analyzing Interview Coding

- Generate more **concept maps** that summarize how neighborhoods engaged in tree planting (e.g., *Figure 3*).
- Create **quantitative variables** for each neighborhood using qualitative codes

Connecting Interview Data to Tree Data

- We'll **connect neighborhood tree survival data** with data on tree planting organizing strategies, follow-up tree care, and other neighborhood activities.

Good environmental science research:

Social science + Natural science

Qualitative + Quantitative

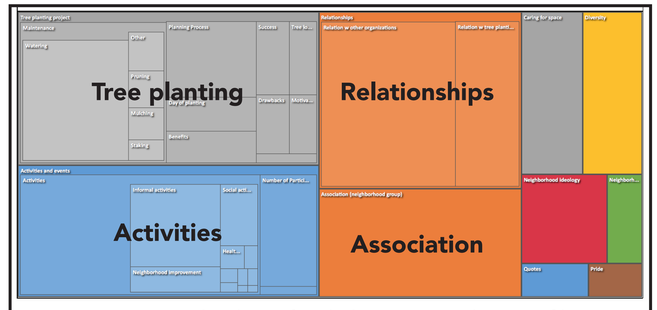

Figure 2. *Hierarchy chart of coded interviews. The size of boxes represents the total number of references coded to this node.*

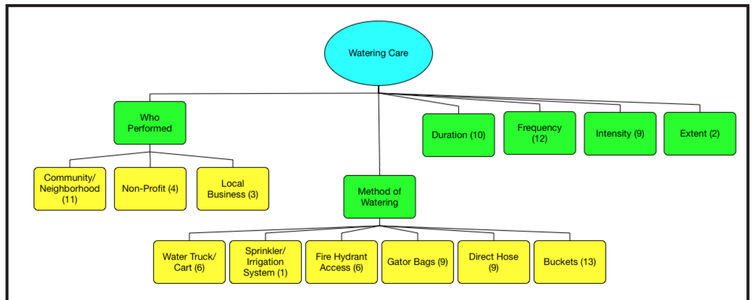

Figure 3. *Node structure for Watering. Numbers in boxes refer to the number of neighborhoods referencing each type of watering method or the party performing the watering.*

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