Landscape in Spatial Cognition: New field methods via ethnosemantic and quantitative approaches

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APRIL 24, 2015
Outline

The larger project
Goals in the field
Language and communities of study
Why landscape? Why here?
Tasks
“New” methods
In progress...
The larger project

Linguistic Relativity

Role of language vs. non-linguistic factors on language and cognition (Li & Gleitman 2002; Bohnemeyer et al 2012)

Domain: spatial frames of reference
- Conceptual coordinate systems used to locate and orient entities
- Relative, Intrinsic, Geocentric frame types

Topography: local landscape features

Population geography: density
Goals in the field

- Reference frames used in language (small-scale spatial descriptions)
- Reference frames used in nonlinguistic cognition (memory encoding)
- Lexical inventory for landscape/topography
- Salience of landscape entities
- Variation between speakers within communities
  - Age, gender
  - Education
  - Literacy
  - L2 use (Spanish)
- Variation between communities
  - Population geography (census data)
  - “Topography”
Isthmus Zapotec (Diidxa za)

Otomanguean language; Zapotecan branch
Tonal; VSO

100,000 speakers (INEGI 2010 census)

Endangered in most communities
  ◦ Shift to Spanish in younger speakers

Strong preference for geocentric reference frames in La Ventosa (Pérez Báez 2011)
Communities of study

Isthmus of Tehuantepec
- La Ventosa
- Juchitán de Zaragoza
- Santa María Xadani
Communities of study

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Communities of study

Isthmus of Tehuantepec

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Why Landscape? Why here?

- Large speaker population
- Variation in population geography and landscape features
- Ethnophysiography: ethnosemantics of landscape
  - Lexical inventory
  - Salience of features
  - Conceptualization of domain
- Use of features in different discourse contexts
  - Direction giving
  - Spatial descriptions
Tasks

Landscape Listing and Description Task (lexical inventory)
Route Description Task (salience of landscape entities)
Talking Animals (reference frames in language)
New Animals (reference frames in memory)
Demographic Survey (variables for multivariate quantitative analyses)
Listing Task

Part 1: Listing landscape entities
◦ Analyzed for recurrence of landscape entities across communities
◦ Establish salience of landscape features across populations
◦ Contribute to documentation and revitalization efforts

Part 2: Descriptions of entities
◦ Used for semantic analyses
◦ Contribute to documentation and revitalization efforts

10 speakers x 3 communities
### Listing Task Data

<table>
<thead>
<tr>
<th>La Ventosa</th>
<th>Juchitán de Zaragoza</th>
<th>Santa María Xadani</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi - wind</td>
<td>Bordo – side</td>
<td>Bize - well</td>
</tr>
<tr>
<td>Dani – hill</td>
<td>Dani – hill</td>
<td>Carreta – highway</td>
</tr>
<tr>
<td>Guiigu – river</td>
<td>Guiigu – river</td>
<td>Esteru – marsh/swamp</td>
</tr>
<tr>
<td>Guixi – trash</td>
<td>Guiixhi – jungle?</td>
<td>Guiigu – river</td>
</tr>
<tr>
<td>Mani’ – animal</td>
<td>Guixi – trash</td>
<td>Guiixhi – jungle?</td>
</tr>
<tr>
<td>Nisa/nisa do’ – water/sea</td>
<td>Mani huinni – animal</td>
<td>Layu – ground</td>
</tr>
<tr>
<td>Yaga - tree</td>
<td>Nisa – water</td>
<td>Nisa do’ – sea</td>
</tr>
<tr>
<td></td>
<td>Yaga – tree</td>
<td>Ranya - milpa</td>
</tr>
<tr>
<td></td>
<td>Yuu - house</td>
<td></td>
</tr>
</tbody>
</table>

**Preliminary findings**
Route description task

Guessing game between pairs
- Elicits route descriptions

Analyze descriptions for landscape entities used in direction giving

Compare to landmarks used in Talking Animals

5 pairs of speakers x 3 communities
Talking Animals

Matching game (referential communication task)
- Adapted from Ball & Chair (Bohnemeyer 2008), Men & Tree (Pederson et al 1998)

Analyze Director’s speech
- Spatial reference frames
- Landscape entities used

40 pairs of speakers x 3 communities
New Animals

Recall memory

Placement under 180° rotation
  ◦ Adapted from Animals in a Row (Pederson et al 1998, inter alia)

Egocentric vs. Geocentric spatial encoding

16 individuals x 3 communities
Quantitative Analyses

Linear mixed effects regression modeling
  ◦ (lmers; Bohnemeyer et al 2012, in press)

Include salience of landscape features
  ◦ Vs. general topography variable for region
“New” methods

• Explore effects of local landscape on reference frame use
  • Lexical inventory
  • Salience of landscape entities in local environment
  • Use of landscape in small-scale spatial descriptions

• Quantitative analyses
  • “Large” data sets
  • Demographic data
  • Ethnosemantics/cognitive anthropology
Still in progress...

Analyses of landscape data
- What’s salient?
- Significant variation between communities?

Modeling
- Community identity?
- Power and convergence
Thank you!

Special thanks to...
My assistants in the field
  Reyna López, Rosalaura, Rosa, Veronica, and their families
My advisors and committee
  Juergen Bohnemeyer, Gabriela Pérez Báez, David Mark, Cala Zubair
The UB Semantic Typology Lab
Funding: NSF DEL (BCS#1264064); UB GSA MDRF (#SP-13-19)
References


