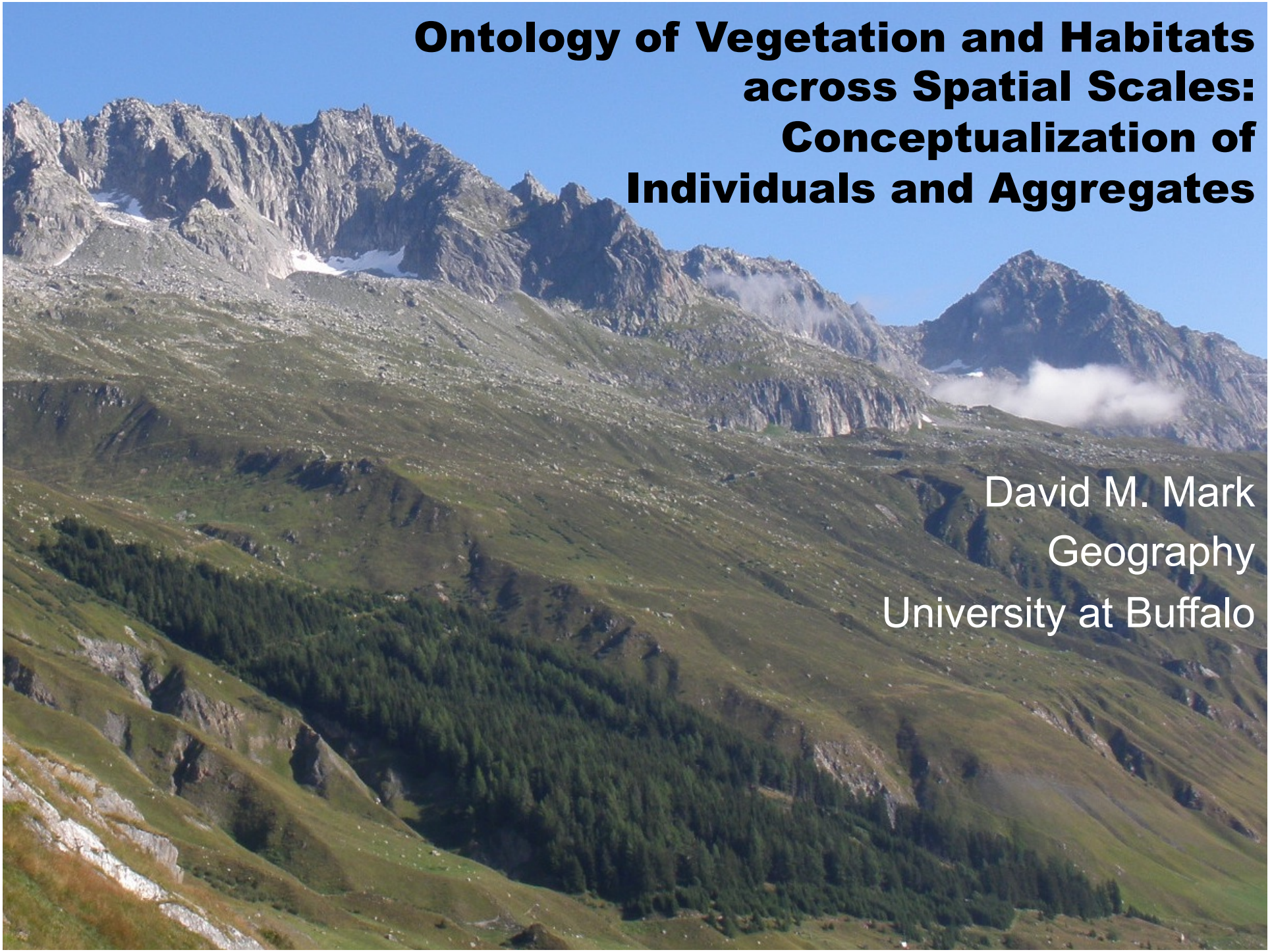

Ontology of Vegetation and Habitats across Spatial Scales: Conceptualization of Individuals and Aggregates

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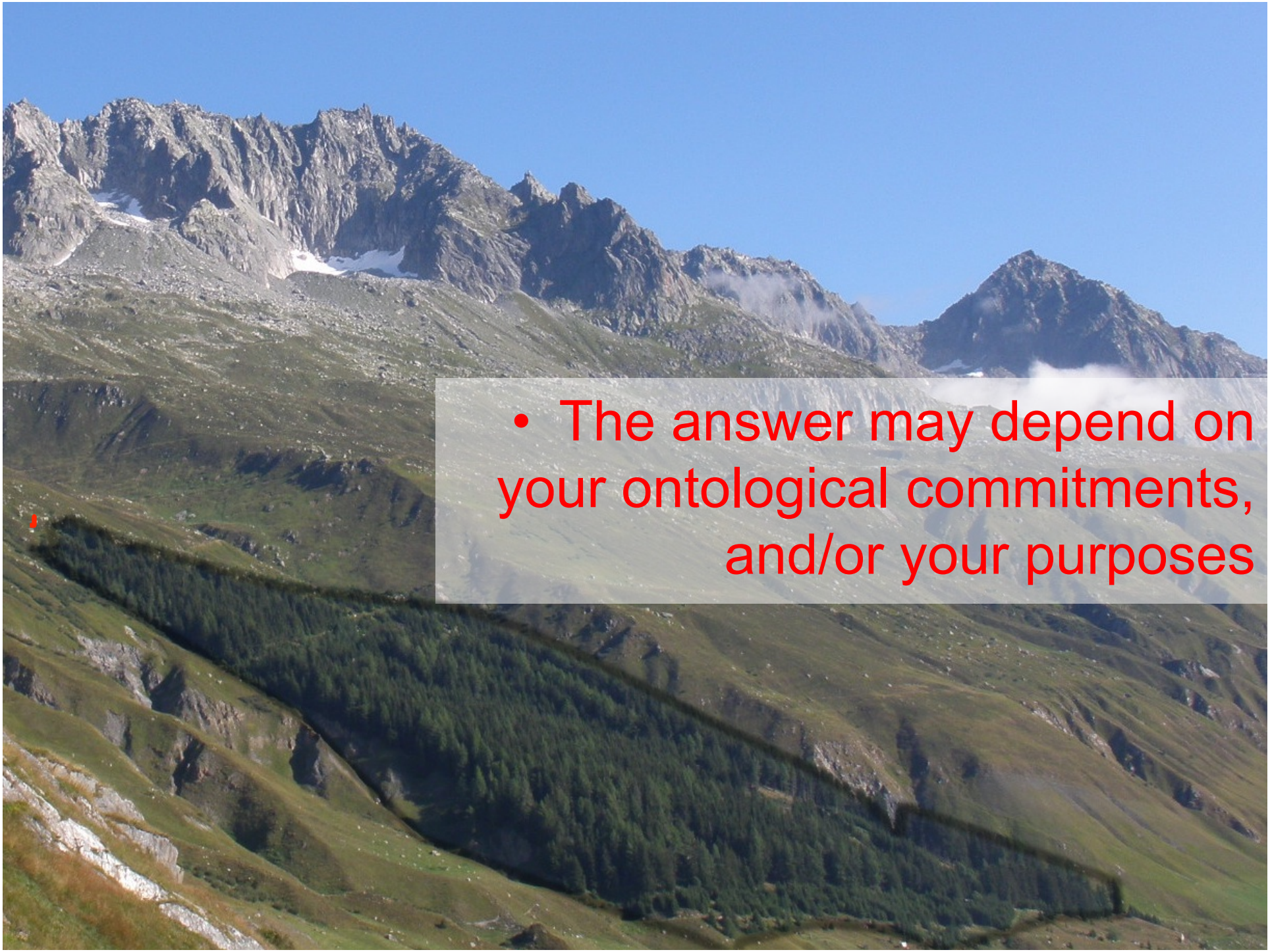
• Is this just several hundred trees?


• Or is it a forest? A woodland?
An “Object”? A “Feature”?


• Or a region filled with trees?


• The answer may depend on your ontological commitments, and/or your purposes

Ethnoscience & Landscape

- Recently, ethnoscience has turned attention to landscape, to phenomena at landscape scales
- Two different approaches have been used

Landscape Ethnoecology

- The core of ***Landscape Ethnoecology*** appears to be the identification of ***ecotopes***
- ***Ecotopes*** are uniform patches of "habitat types" and are "the smallest ecologically-distinct landscape features in a landscape mapping and classification system."
- This means that landscape ethnoecology has an ontological commitment to ***discrete fields***

Ethnophysiography

- **Ethnophysiography** delimits and classifies landscape ***features***
- Ethnophysiography has an ontological commitment to ***objects*** or object-like ***features***

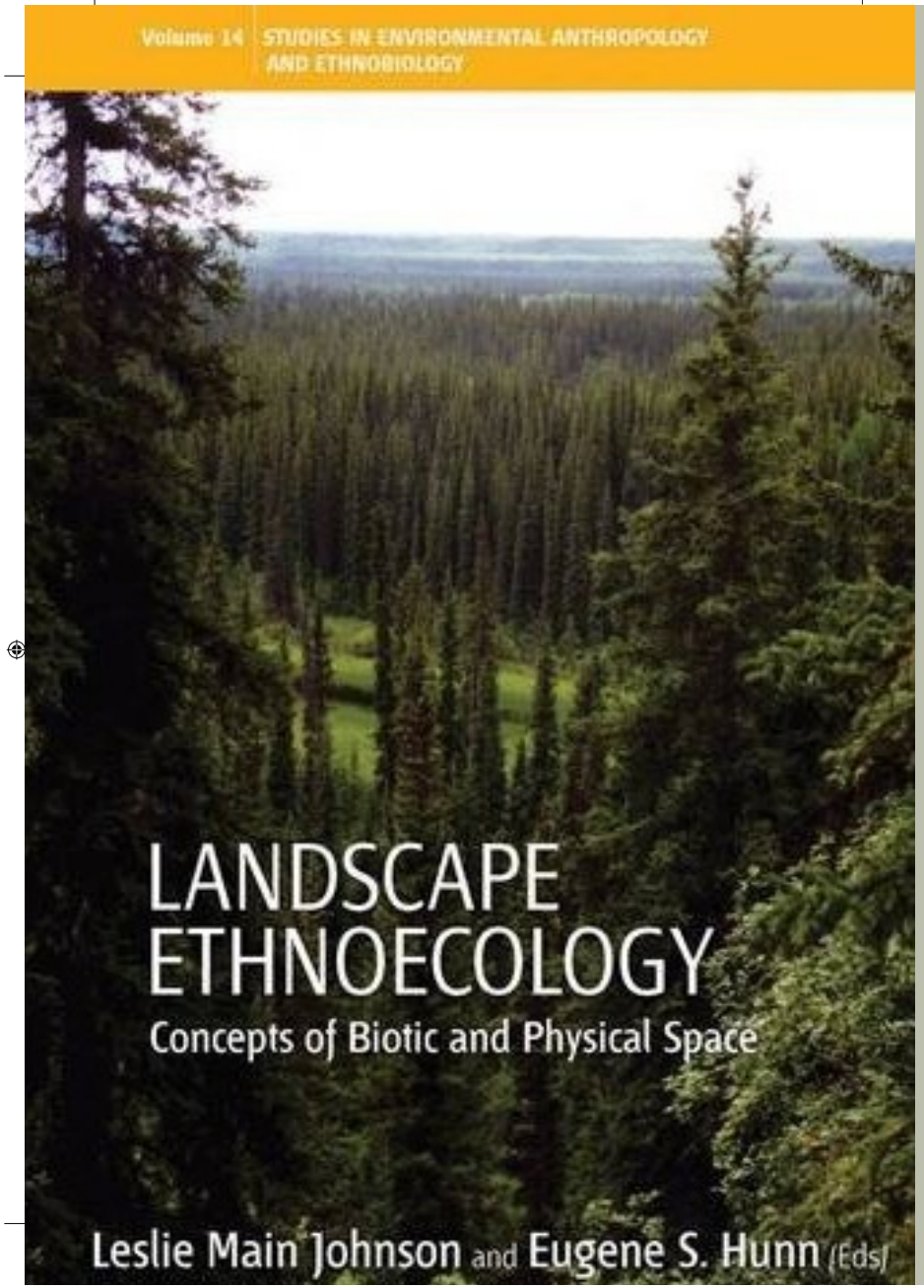
An Ontological Mismatch

- Although many landscape ethnoecology papers also discuss types of landforms and waterbodies, it is difficult to fit these into an ontology based on ecotopes
- But vegetation, an important component of landscape, is almost as difficult to fit into the features or objects view that underlies ethnophysiography

This Presentation

- This presentation will review these approaches and suggest ways to integrate both approaches into a unified ethno-theory of landscape
- Inspiration will be drawn from fieldwork with the Yindjibarndi (Australia) and Navajo (USA) peoples and languages

Two Recent Books



CLU 4

Mark et al. Landscape in Language

Culture and Language Use 4

db

Landscape in Language

Transdisciplinary perspectives

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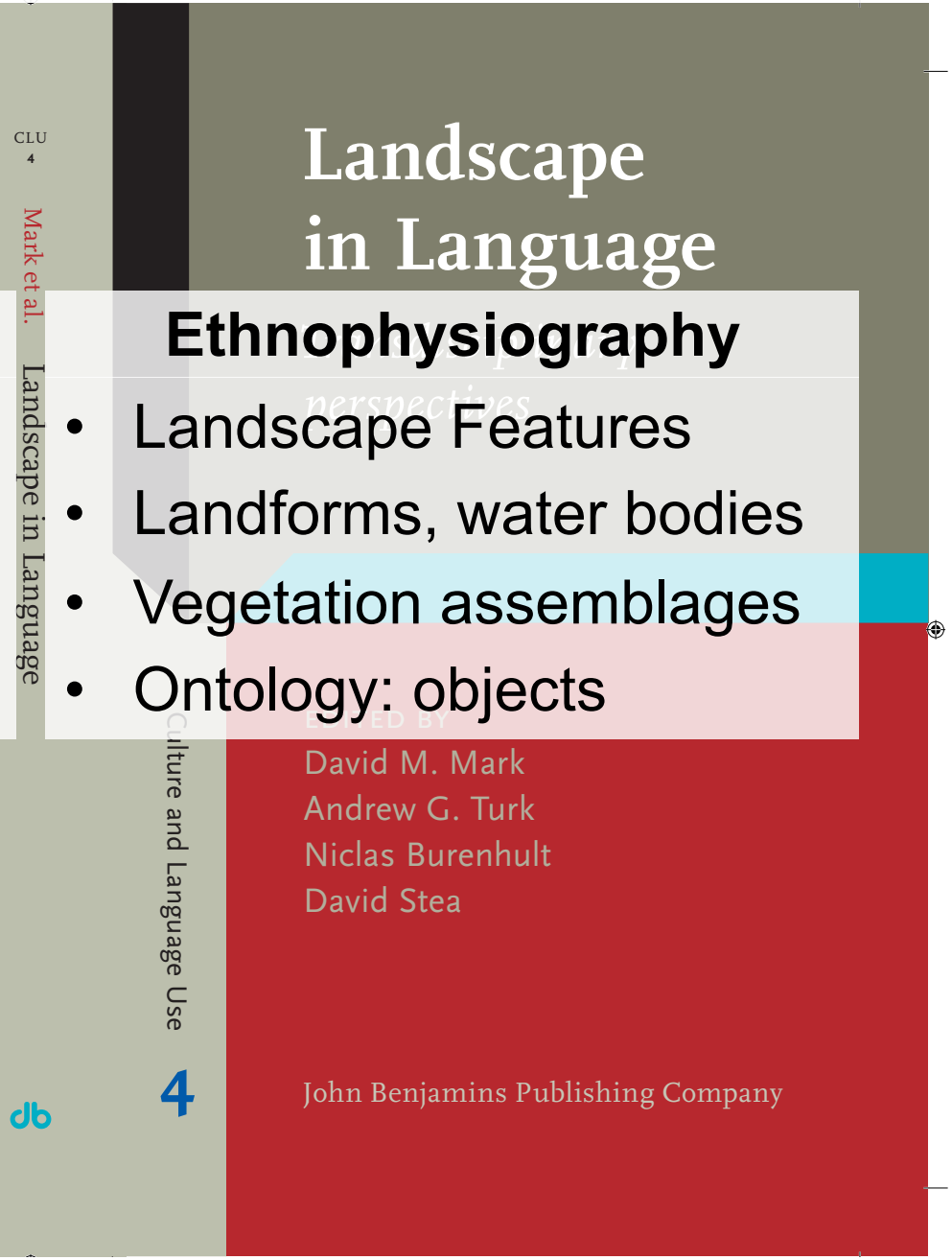
John Benjamins Publishing Company

Two Perspectives, Two Ontologies

Landscape Ethnoecology

- Habitat Types
- Land Use, Land Cover
- Uniform Patches
- Ontology: Fields

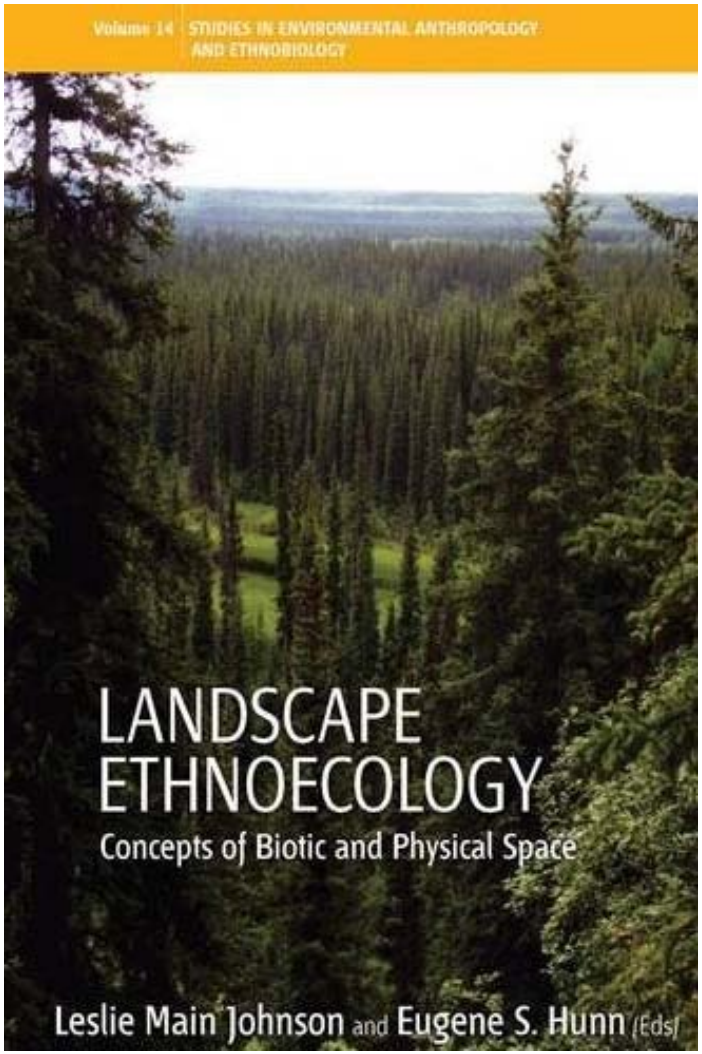


Ethnophysiography

- Landscape Features
- Landforms, water bodies
- Vegetation assemblages
- Ontology: objects

Landscape Ethnoecology Approach

- landscape ethnobiology has developed largely from ethnobiology
- a key idea is ***ecotopes***



Ethnophysiography Approach

- People* commonly divide landscape into ‘things’: Objects, features
- When U.S. English-speaking undergraduates were asked to list “something geographic”, the most frequent things listed were *mountain*, *river*, *lake*, *ocean*

- ** is this a universal conceptualization?? Or a Eurocentric claim?*

Plants in Ethnophysiography

- Plants have a somewhat awkward position within the ethnophisiography approach
- Are individual plants *geographical* entities? Trees come close to being considered “geographical”
- Core domains for ethnophysiography appear to be landforms and water bodies
- However, entities referred to as a *forest* or *woods* belong on the list of geographic entities
- These have been referred to as ‘vegetation assemblages’, and some ethnophysiography researchers have excluded them

Landforms in Landscape Ethnoecology

- Similarly, landforms and water bodies appear to have an awkward position within the landscape ethnoecology approach!
- They do not fit with the ecotopes idea that is the key concept of landscape ethnoecology

Ontology of Environment

- I claim that these two mismatches (vegetation in ethnophysiography, landforms in ethnoecology) arise because they fall within different ontologies:
- **Objects** and **fields!**
- **Objects**: ‘things’ located in space
- **Fields**: attributes of positions

“Place”

- Leslie Johnson has referred to folk ecotopes as “kinds of places”
- But as a geo-ontologist, I think that places are a third ontological class

Some Fundamental Ontological Categories

- **Objects**
  - Bounded
  - Attached or Detached (from other objects)
- **Fields**
  - Functions from location to variable, z=f(x,y)
  - Z variable can be nominal, interval, or ratio
- **Places**
  - Where something can be located and/or
  - Meaningful regions of space

Ontology Providing Etic Grid?

- Research in ethnoscience can benefit if researchers have available an ‘etic grid’ against which to record how a certain culture or language categories some domain
- A familiar example is the Munsell color chart
- Can a general ontology approach provide an unbiased set of terms or dimensions for coding the meaning of terms for landscape components across cultures?

Traditional Geographical Knowledge

- I claim that **Traditional ecological knowledge** of *geographic phenomena* is different from knowledge of most domains
- Traditional Geographical Knowledge is mostly about ***instances*** (places; particular features) rather than about ***types/kinds***
- *(Interestingly, this is also true for GIS and Spatial Data Infrastructures from dominant cultures)*
- General knowledge of geographic entity types is often sparse
- Ecotopes may be an exception

Ecotopes or Features?

- “The synthetic view of [land cover] – essentially a classification of types of locale – is a more salient factor in landscape management than specific biophysical features.”
  - – Chris Duvall (2011, p. 137)

Examples for Scaling up Vegetation

- **English**
  - The English language has several words for vegetation ‘assemblages’ as features/objects:
    - forest, woods, woodland, meadow, …
  - These general vegetation assemblage terms can be combined with ethno-botanical categories:
    - spruce forest, juniper woodland, oak savanna

- **But not all languages do it this way!**

Examples for Scaling up Vegetation

- **Navajo**
  - The Navajo language has a suffix: -tah, often translated as "among"
    - Diné = the People;
      - Dinétah: 'among' the People, the name for the Navajo homeland
    - Tsé = rock;
      - Tsétah: 'among' the rocks: an area with scattered rocks
    - **Gad = cedar;**
      - **gadtah, 'among' the cedars = cedar woodland**
- **Hopi**
  - Apparently, Hopi just uses a plural of the tree type for a woodland composed of such trees

Thank you for your attention!

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Thank you for your attention!
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