Mapping Socio-Economic Indicators in Google Earth

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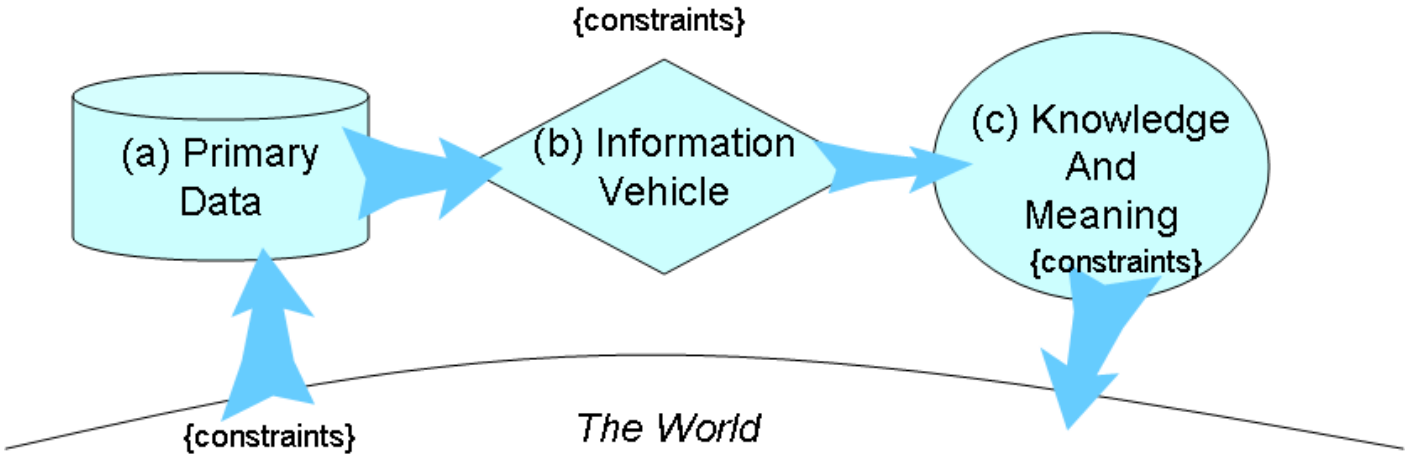
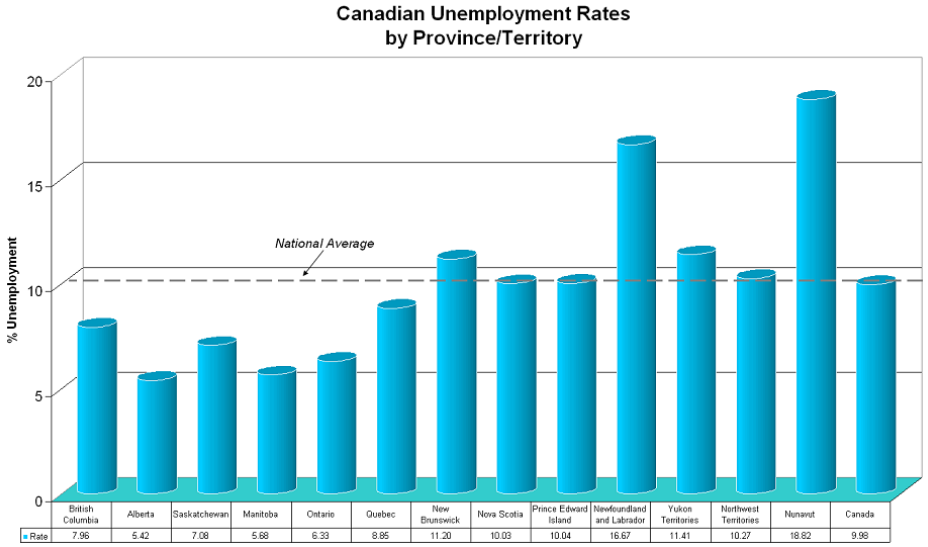
Overview

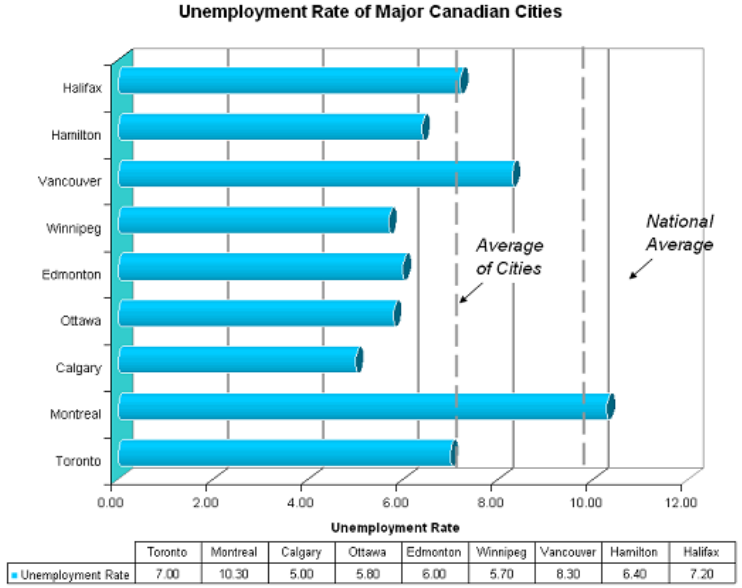
- Mapping Socio-Economic Data
  - Issues between 'Maps' and 'Statistics'
  - General Cartographic Principles
- New Technologies, New Understandings
  - Multi-variate, multi-scalar presentations of geo-statistical data
  - Demonstration



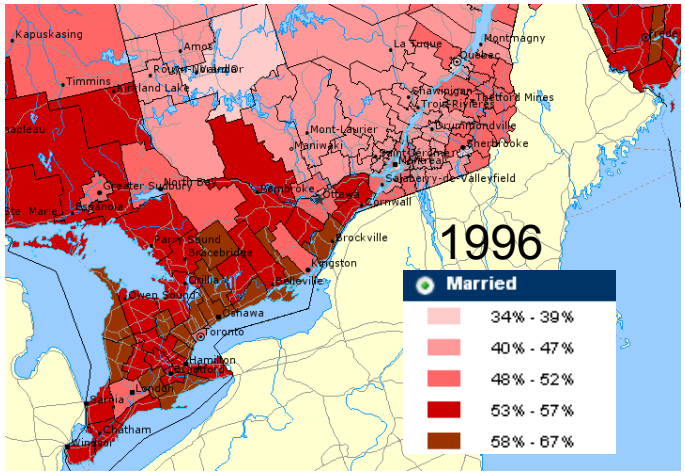
Maps and Statistics

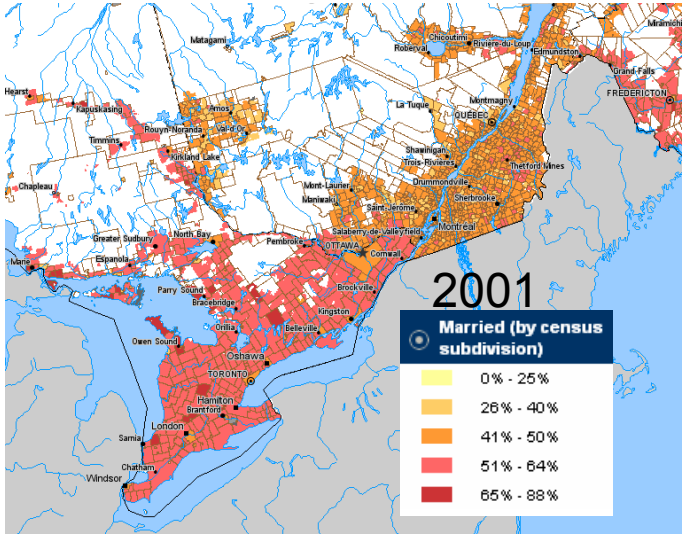
- Often, the interest in the use of socio-economic statistics is in the 'statistics' themselves, and not so much the geospatial patterns of the statistics
- Maps are often used to 'augment' statistics for geographical referencing, and are not the key source of 'information' that informs an analysis or decisions.





Cartography: Basic Principles





Source: atlas.gc.ca

Two key elements:

(1) Information (Message)
('What' to say)
(2) Visual Communication (Aesthetic)
('How' to say it)

Factors:

Scale,
Level of Abstraction,
Aspect of Reality Represented

General Approach:

"Make things as simple as possible, but not simpler!"
Albert Einstein

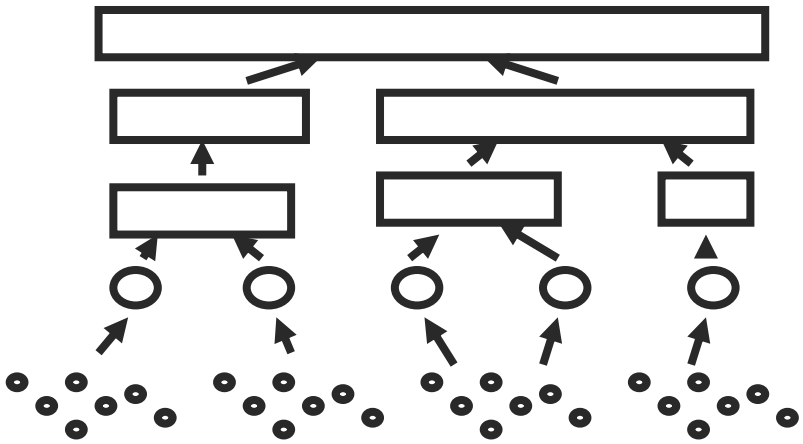
How Data is Collected/Aggregated

Descriptions and Inferences made from geostatistics apply only to the level at which they are aggregated; and are 'relative' to other units at a particular level/scale.

Inferences made about levels using other level data are fallacies:

1) Lower to Higher
   – **Overgeneralization**

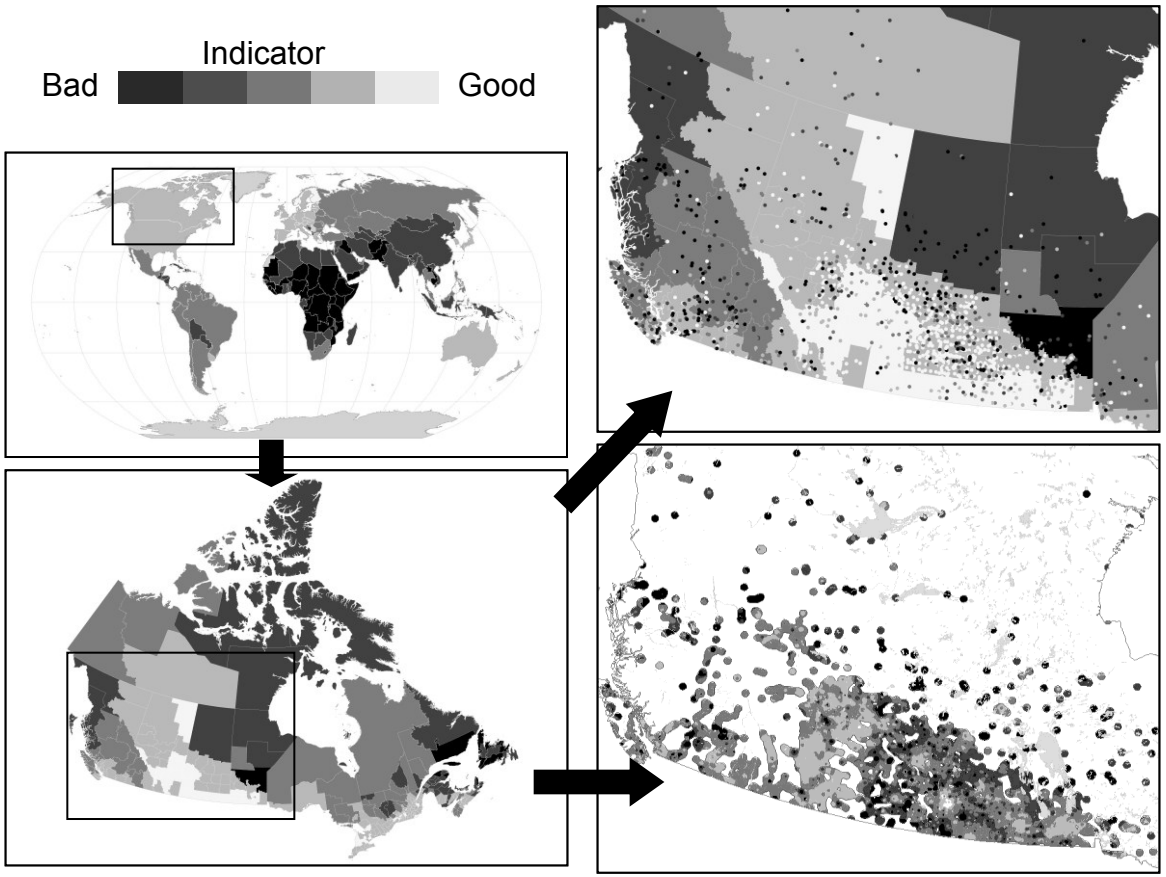
2) Higher to Lower
   – **Ecological Fallacy**



An Important Principle!

These principles apply not only to statistical/quantitative data; but also to qualitative data, and other forms of geographical analysis

What do these maps have in common?



Answer:

The Same Data!

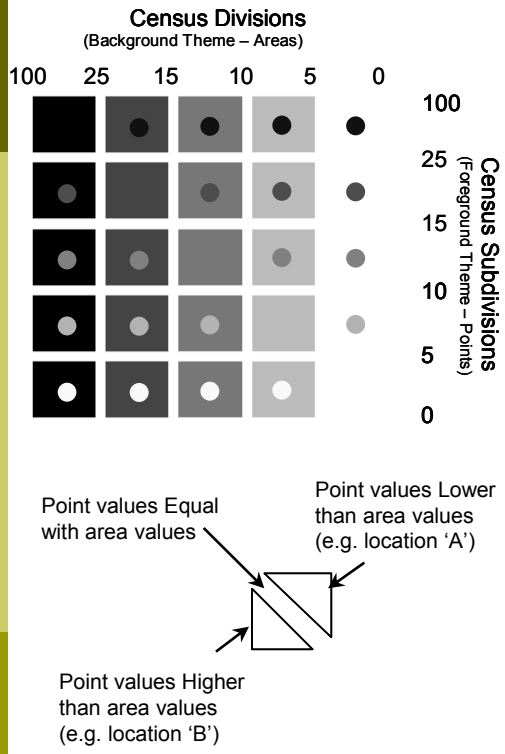
Issue:

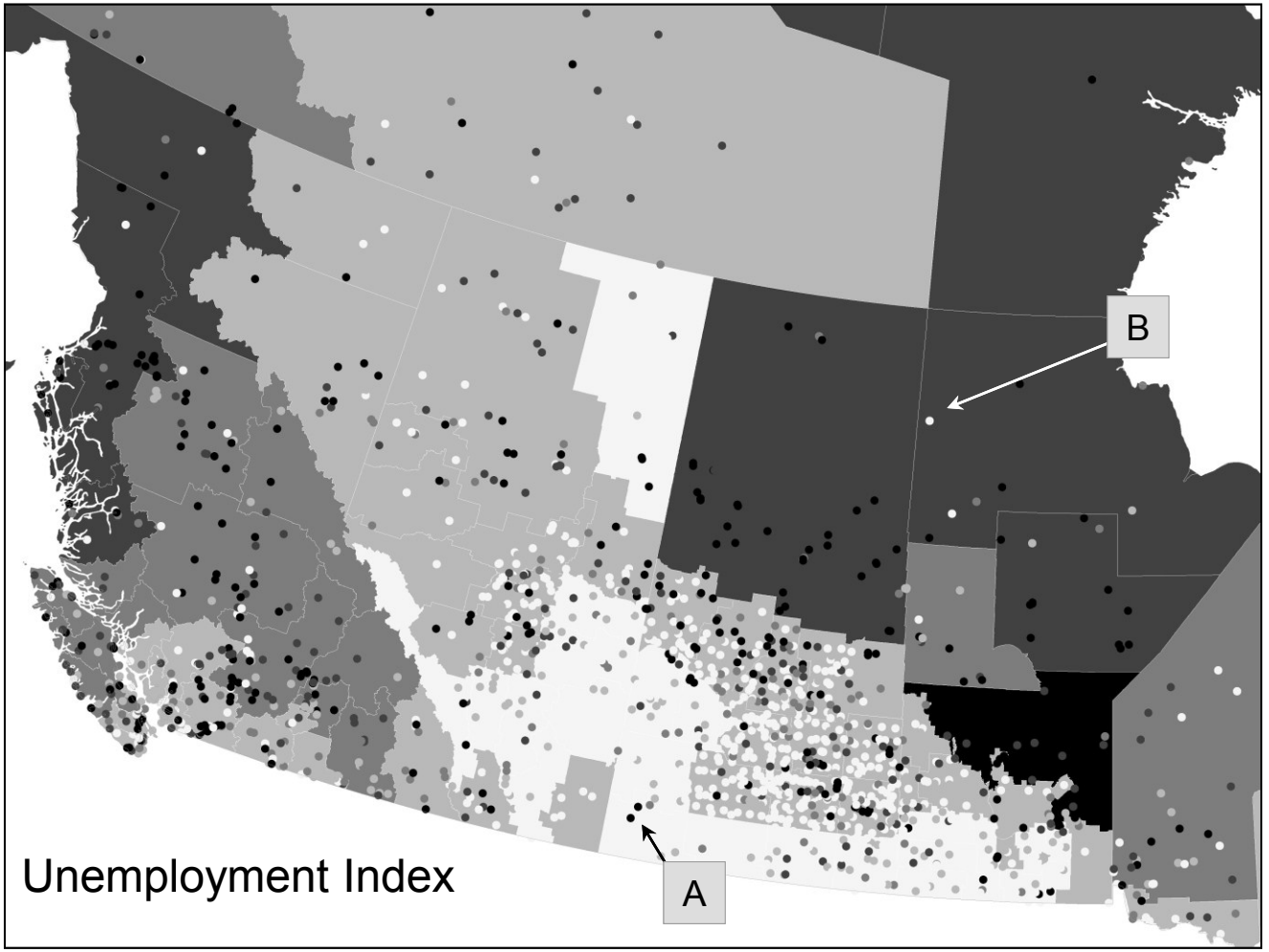
How we characterize and understand places, depends on ‘geographical scale’ and ‘boundary conditions’.

GIS allows us to look at affects of projecting different types of boundary conditions.

Data Source: 2001 Census
Maps: Eddy, B. 2006. Ph.D. Thesis.

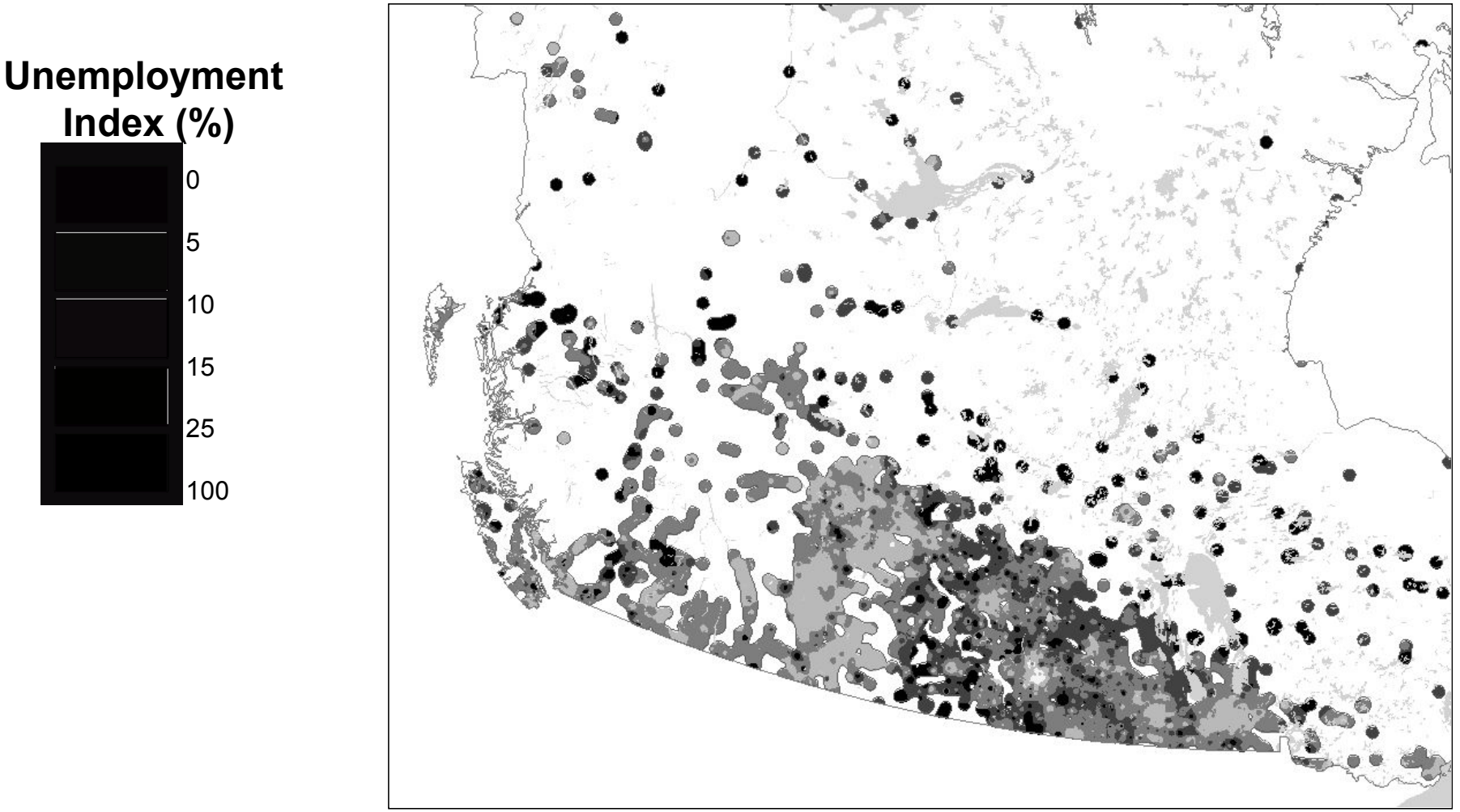
A Domino Map





Data Source: 2001 Census
Map: Eddy, B. 2006. Ph.D. Thesis.

A Surface Map



Data Source: 2001 Census
Map: Eddy, B. 2006. Ph.D. Thesis.

Demonstration

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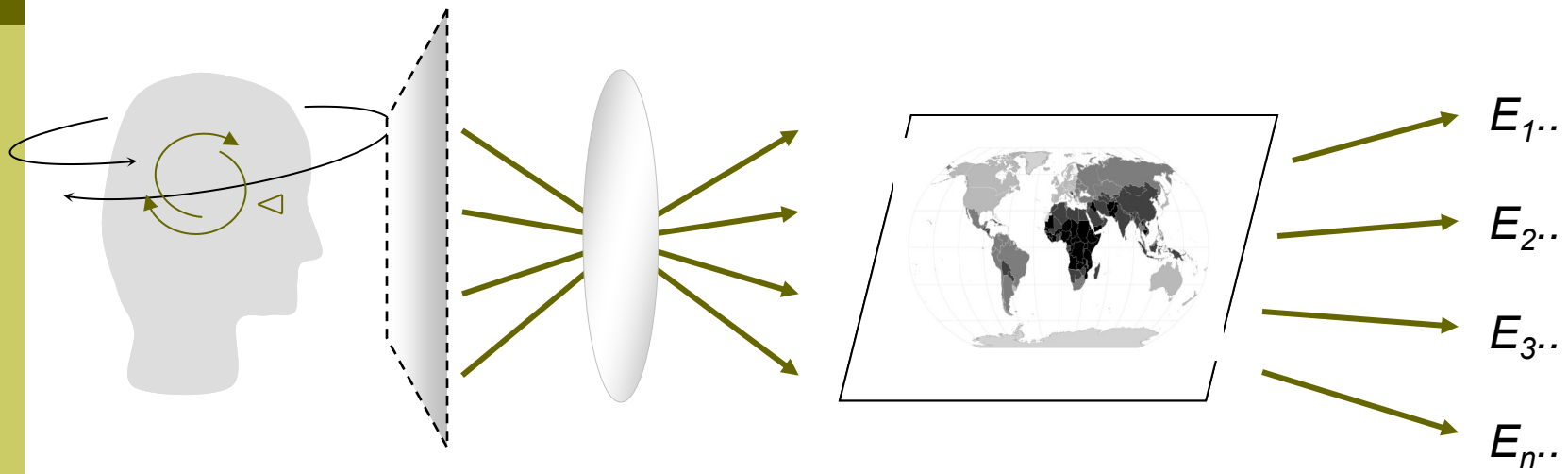
Extras

Geo-Ontological Contingency

Ontology → Methodology → Scale Factor* → Epistemology



INTERPRETATION FILTER

SPACE AND TIME (Context)

Internal Boundary Conditions

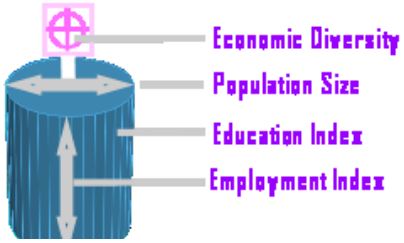
External Boundary Conditions

Conclusion

- Geo-Ontological Contingency
  - What we say about ourselves and the world around us depends on our perspectives and perceptions about what we think there is, how it might be, internal and external boundary conditions, and the geographical scale at which we observe them.
- Location Is Everything! Geography Matters!
  - Very few (if any) fields of formal knowledge can escape Geo-Ontological Contingency
  - Take it with you!

Example Views

Place-based Indicator Key



Have and Have-Not Regions

- Have (Core)
- Have Some (Periphery)
- Have Not (Marginal)

Surface Models (various indicators)

- Generally More Favourable
- Generally Less Favourable

Zoom Level 1

Zoom Level 2