GEOG 597D: GIScience Seminar

GeoSemantics

Cognitive and linguistic aspects of geographic space—a GIScience perspective

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The course is focusing on cognitive aspects in GIScience which have recently been addressed under the term GeoSemantics. The course will provide insights into issues in defining meaning (semantics) of spatial relations. The primary focus is placed on cognitive aspects although we will encounter and bridge the gap to formal characterizations and how they allow us to define meaning of spatial relations.


Source: Wikipedia

As a motivational example take the character Pepe LePew from the Warner Brother cartoons. Many theories on categorization would fail to explain why this is supposedly funny. To refresh your memory: Penelope, a rather innocent black female cat becomes subjected to inappropriate attention by Pepe, a gregarious male skunk. Pepe's desire is aroused when Penelope trips and white paint poured over her leaving a (skunk-like) white stripe. The joke, of course, is that she is not a skunk but appears like one (the story actually reverses in the end when Pepe falls into blue paint). This simple example shows how complex and sophisticated our conceptual system can be in defining meaning: it disregards perceptual features but focuses on the correct biological history instead.

The course will offer students guided discussion on cognitive topics related to geographic aspects which are spatial in nature. It will be a critical reading course in which students will lead discussions. The following topics will be addressed:

- concepts and concept theories
- developmental aspects of concepts
- the manifestation of abstract concepts as image schemata
- language as a window to cognition
- what's special about spatial language
- the relationship between language and other forms of representations such as graphics
- the definition of meaning through geometry, especially the definition of similarity measures

Furthermore, we will evaluate different methods for knowledge elicitation and students will be able to conduct behavioral studies to evaluate GIScience theories and formalism from a cognitive perspective.

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