

Emerging from the Quagmire



Building Expert Systems Technologies for the Social Sciences

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INTRODUCTION

■ Goals

- An expert system for the Social Sciences?
- A rule bound, knowledge based online data extraction engine for aggregate US Census data

■ NHGIS

- What is it?



NHGIS

National Historical Geographic Information System

www.nhgis.org



Motivation

- The problem
 - Growing data
 - Growing internet
 - Growing software?
- Declarative vs. procedural approach



The Knowledge Base

- Definition

- a computable description of a domain

- Contents

- some examples of the relations employed



- **Synonymy**

- Hyponymy and Hypernymy

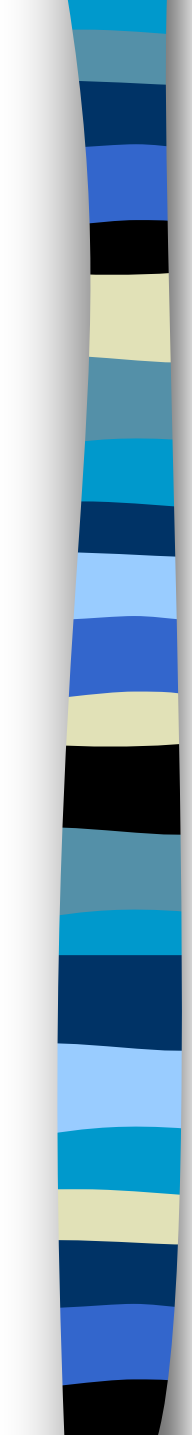
- Meronymy

- Others to explore

Antonymy

Similarity

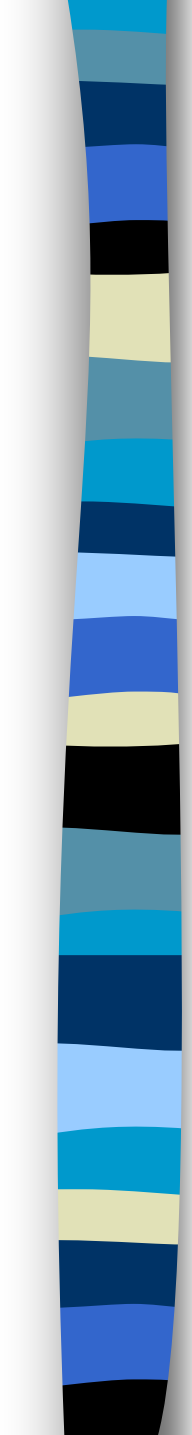
Polysemy

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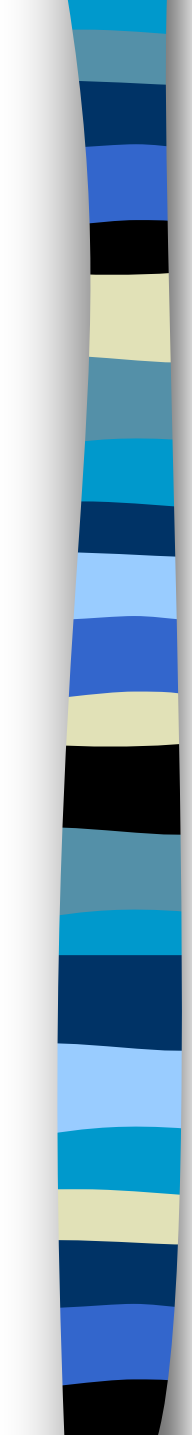
[census geography hierarchy](#)

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Polysemy



Knowledge Acquisition Bottleneck and Proposed Solutions

- Sources of the knowledge base
 - well defined thoroughly documented data
- Nature of the information in the knowledge base
 - read only, static and close ended