

# Developing an Ontology for the GovStat Project

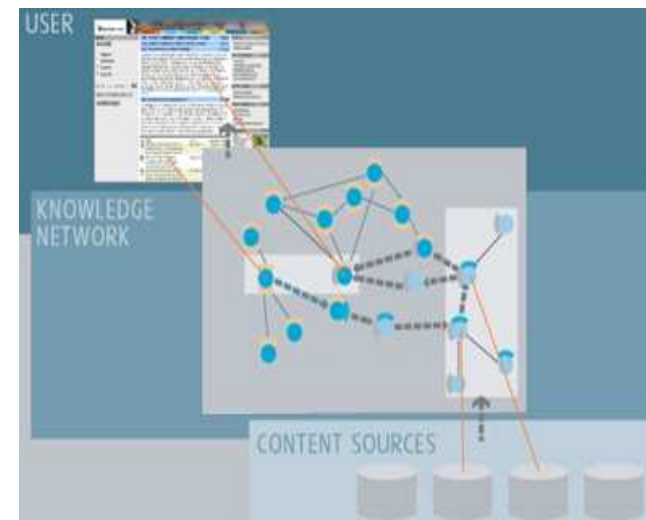
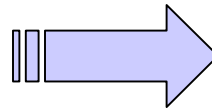
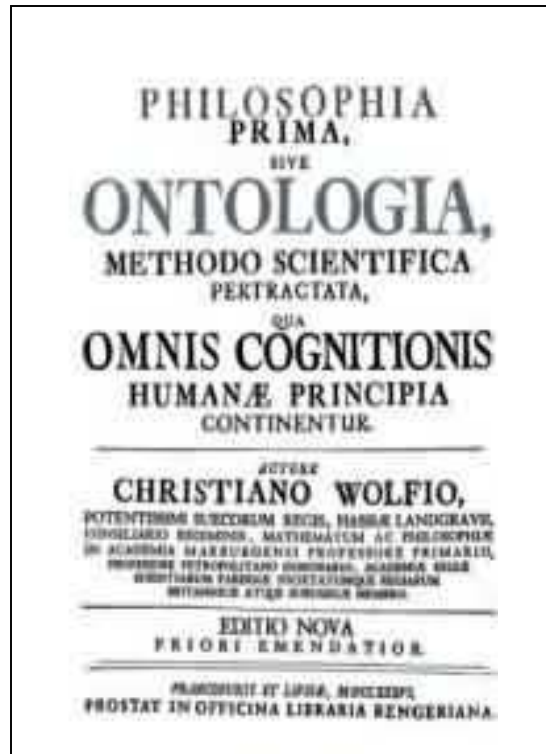


Cristina Pattuelli

Doctoral Student Research Forum

March 28, 2003

# Ontology → ontologies



Developing an Ontology for the  
GovStat Project

# Plethora of Definitions

*Ontology* is a particular theory about the nature  
of being or the kinds of existent  
(Webster's dictionary, Woolf 1981)

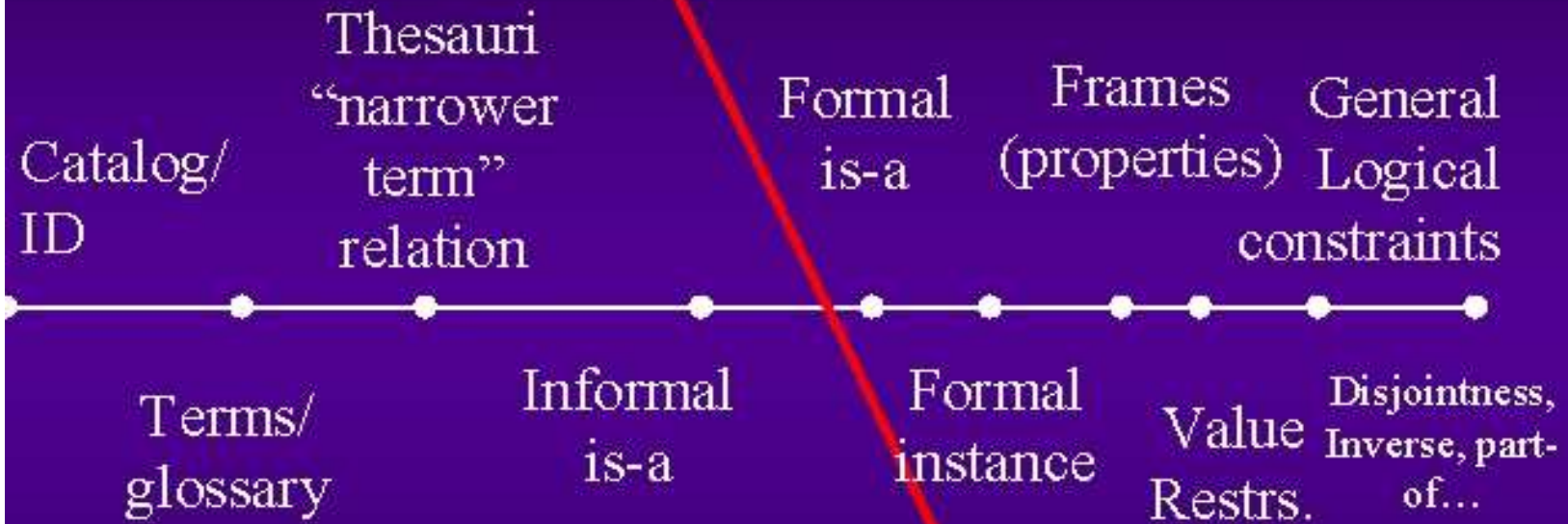
• •

An *ontology* is an explicit specification of a  
conceptualization  
(Gruber 1993)

# Range of fields

- Philosophy
- Linguistics
- Library Science
- Computer Science
- AI (Knowledge Representation)
- DBMS (Conceptual modeling)
- OO Software Engineering (Knowledge engineering)

# What is an Ontology?



<http://www.daml.org/2001/02/daml-talk-021601/sld001.htm>

# Ontologies are Hot

- Improve information retrieval
  - Concept-based search
  - Context-aware entry and retrieval
- Reconcile terminology
  - (e.g., different XML dialects)
- Support interoperability for knowledge management

# Ontologies are Hot

- Integrate data from multiple applications and data sources
- Enable sharing and re-using of web content for smarter applications
- Support browsing (Yahoo, Lycos) and searching for e-commerce (Amazon, eBay)

# Taxonomy of Ontologies

- Top-level ontologies
- Domain ontologies
- Task ontologies
- Method ontologies
- Application ontologies

# The GovStat Ontology

- Domain-specific
- Application-dependent
- User-specific
- Supports the design and deployment of the SIG

# The GovStat Ontology

- As a support for the SIG:
  - The ontology serves as a *navigation* tool as well as an *organizational* tool.
- Alone:
  - The ontology serves as a *learning* tool for user exploration of the relationships between concepts

# The GovStat Ontology

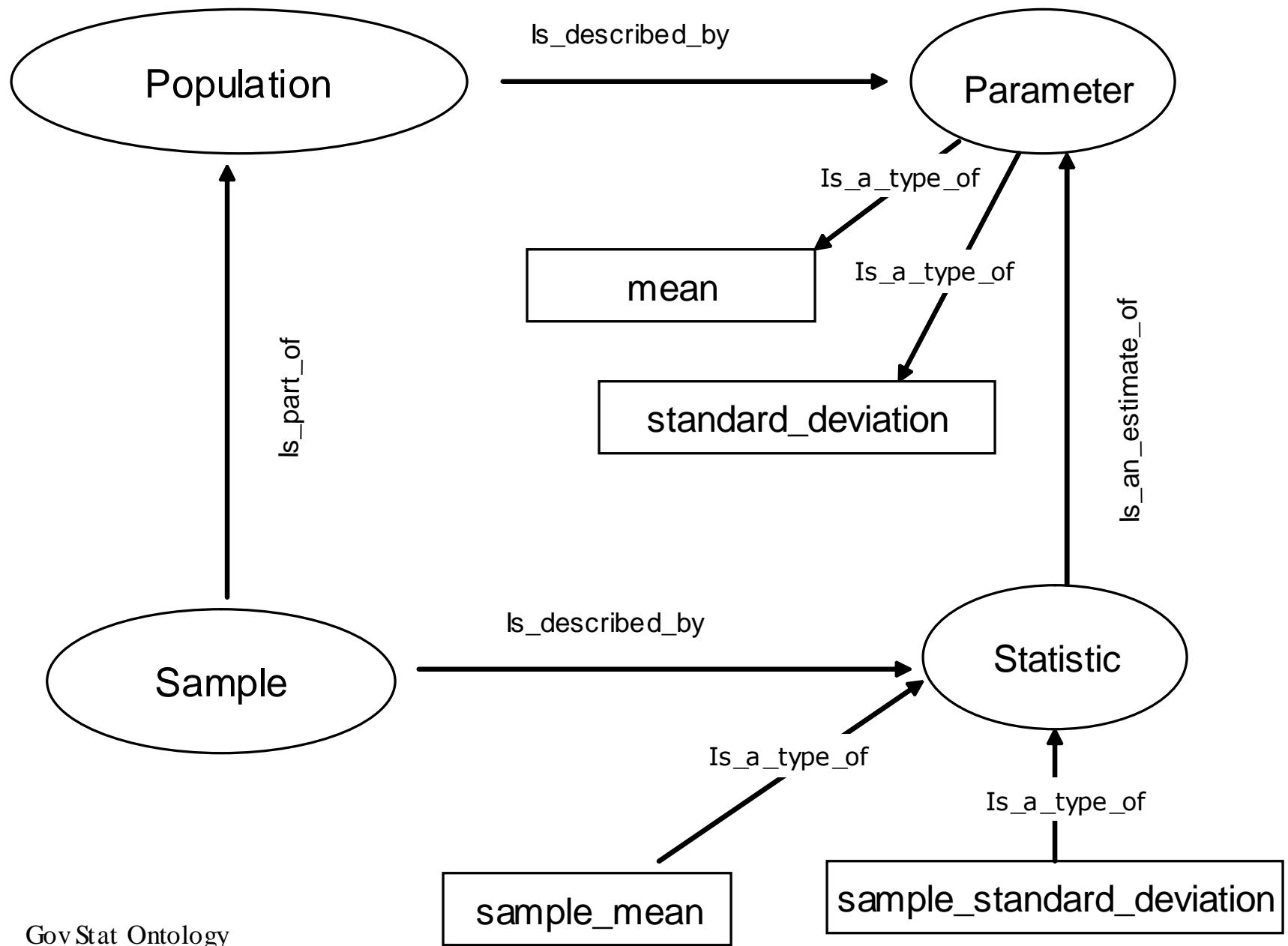
- Light-weight formality
  - Level of formalization will include: concepts, taxonomic and functional relationships among concepts.

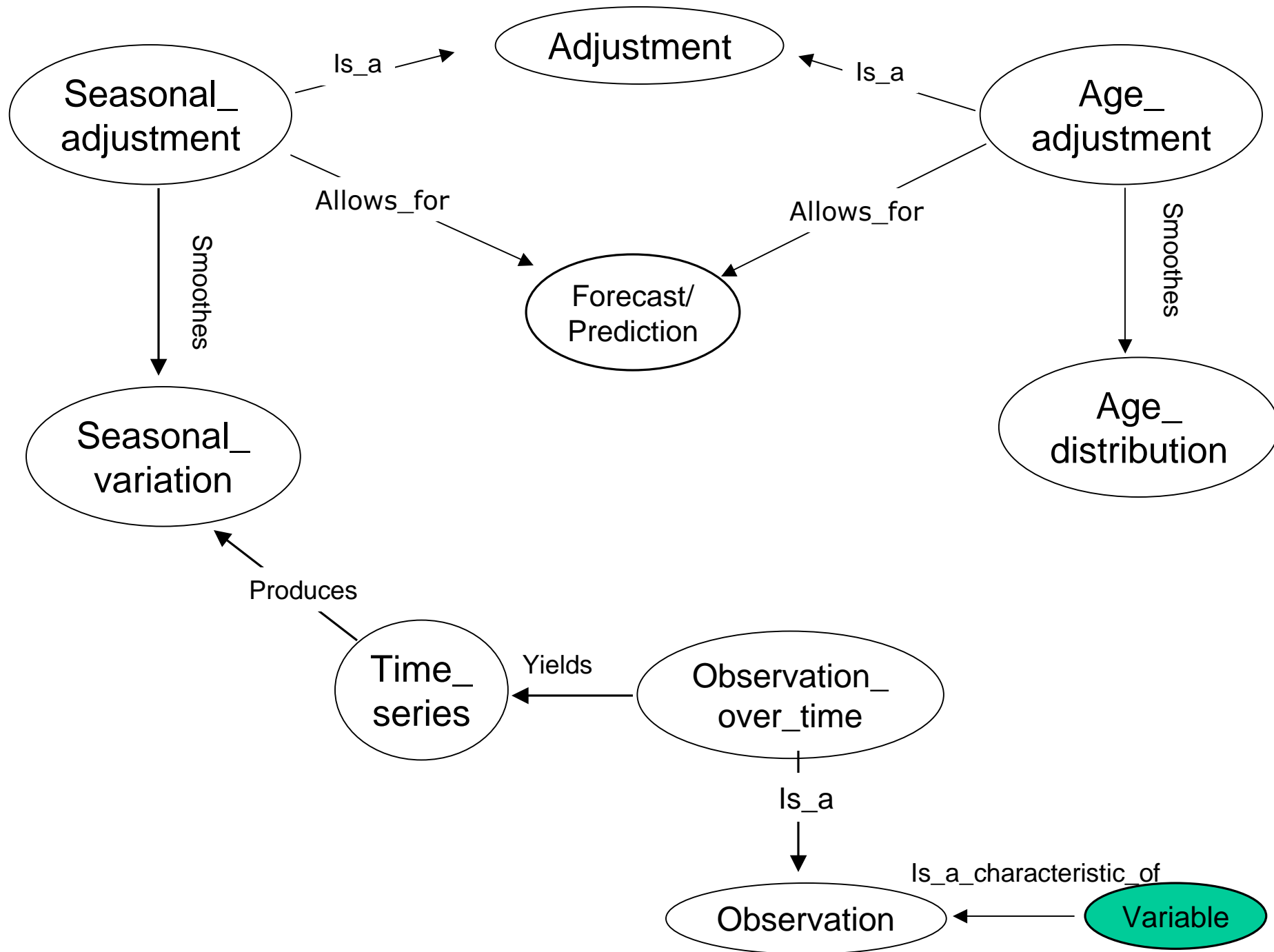
# Methodology

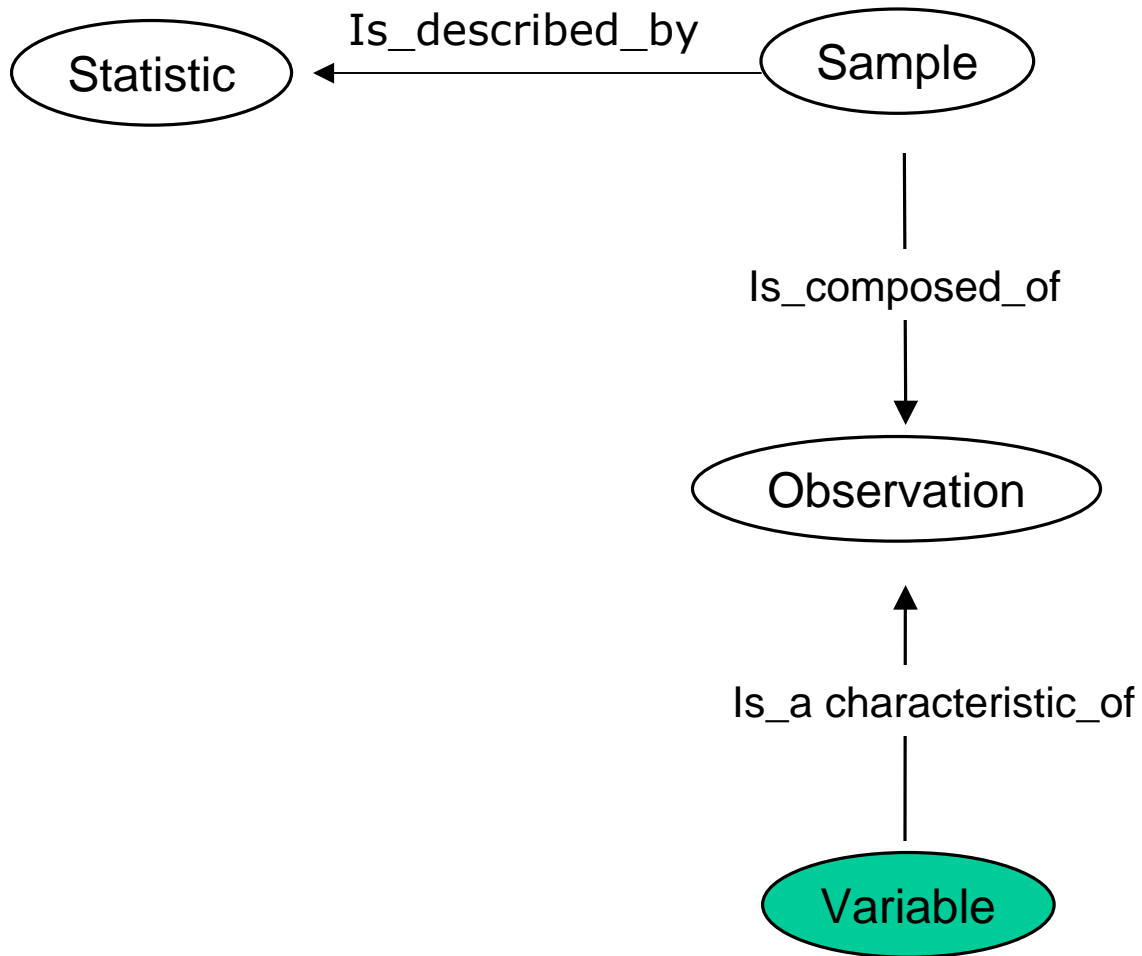
- Specification
- Knowledge Acquisition
- Conceptualization
- Formalization/Implementation
- Integration
- Evaluation
- Maintenance
- Documentation ongoing

# Design process

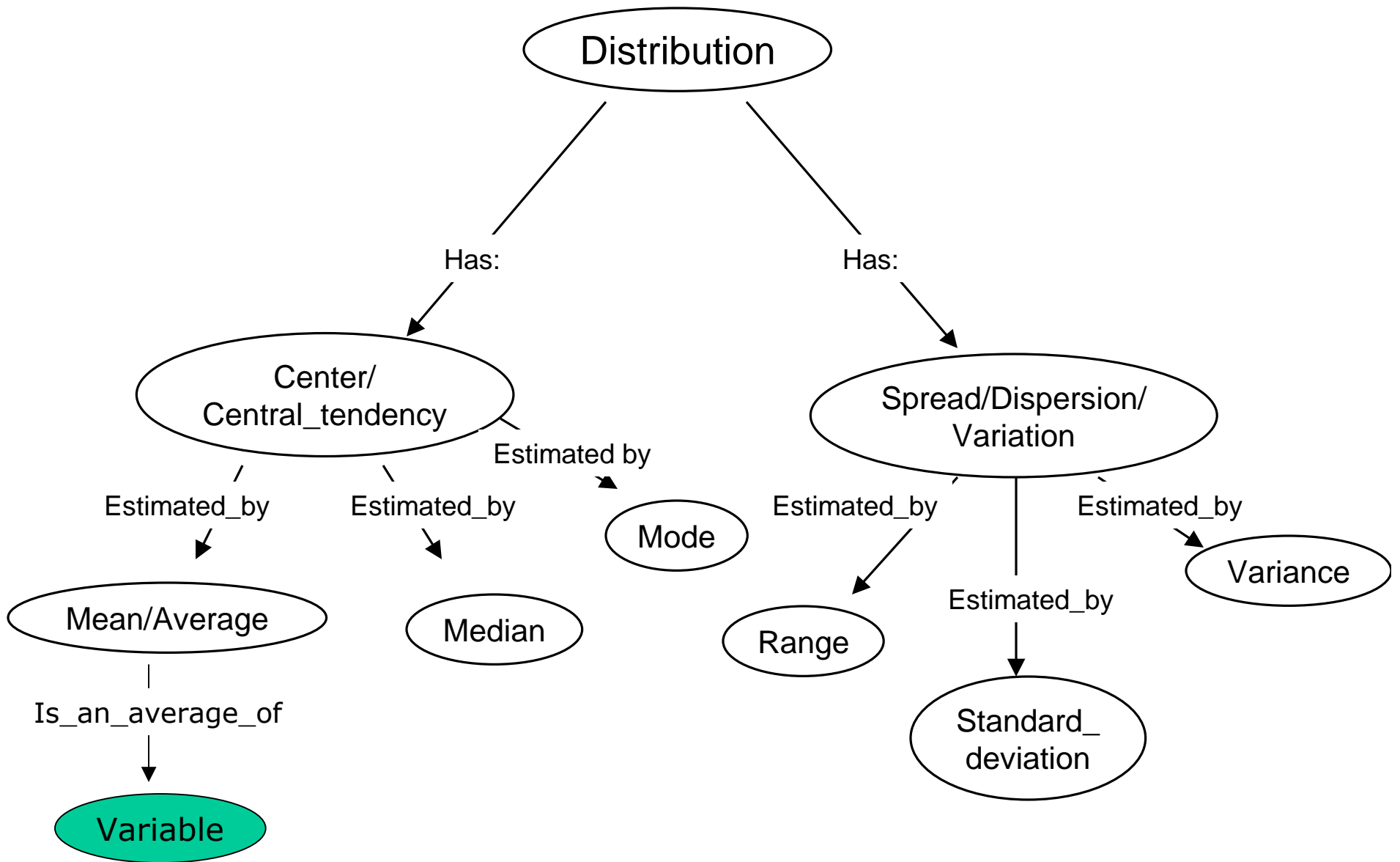
- Conceptualization
  - Types of concepts
  - Top-level divisions
  - Internal structure of concepts
  - Taxonomic organization
    - Is-a relations
    - Part-whole relations
  - Functional relations



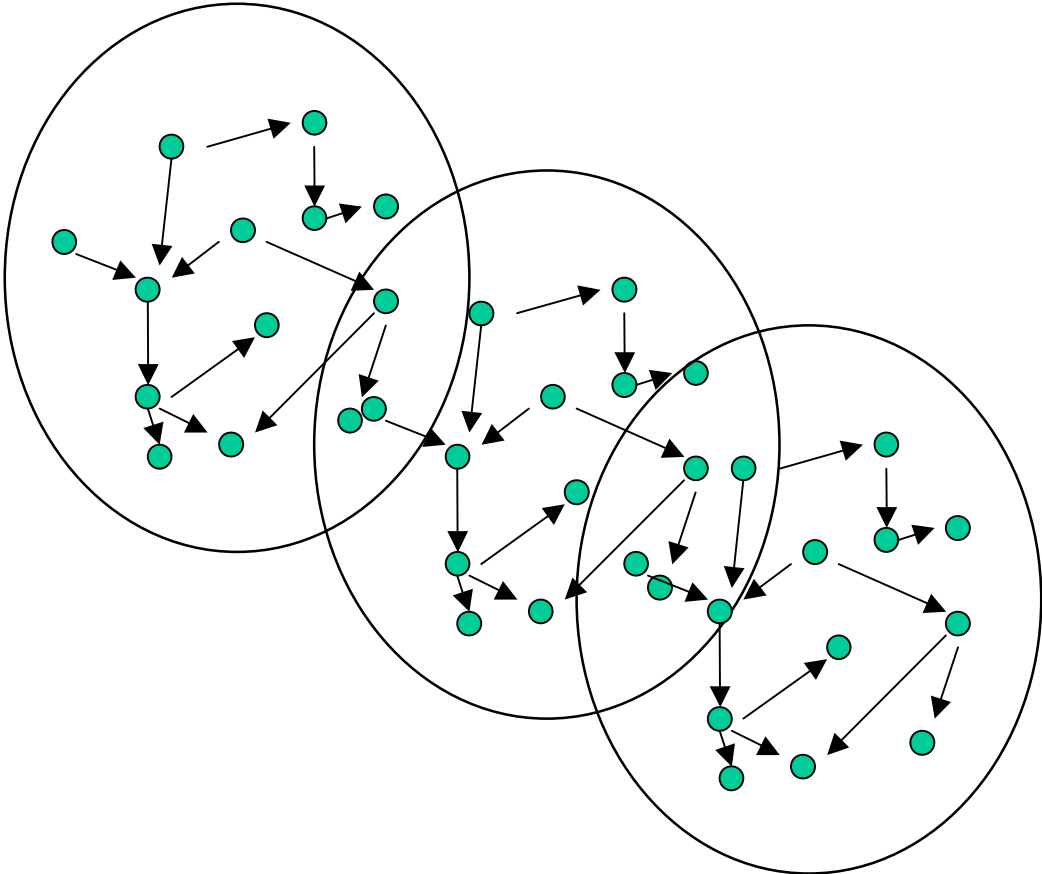




Developing an Ontology for the  
GovStat Project

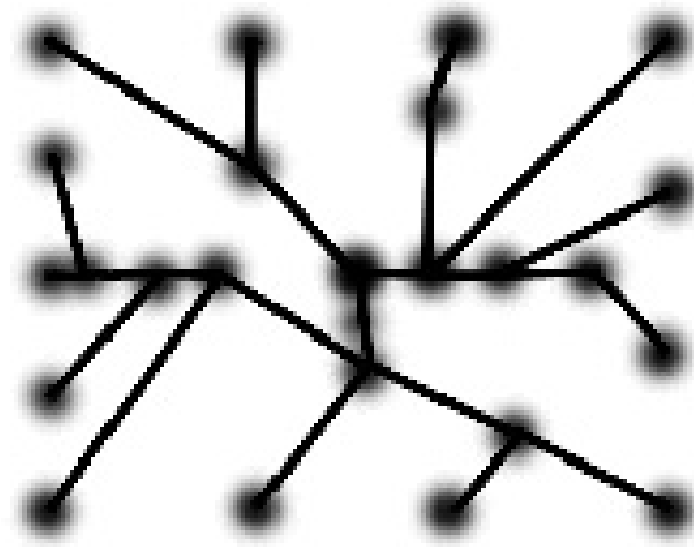


# Seeing the *Forest* for the *Trees*



Developing an Ontology for the GovStat Project

# Thank you!



Developing an Ontology for the  
GovStat Project