Developing a Legal Research Ontology

Amy Taylor
Pence Law Library
Washington College of Law
American University
Presentation roadmap

- Project origins
- What is an ontology?
- How do you develop an ontology?
- My ontology using the subject of tort law
- Next steps
Westlaw Classic

The traditional display of the West Key Number System for legal classification and informational retrieval.

Westlaw Next

The updated display of the West Key Number System. Note that the classification outline has been removed.
Why develop an ontology?

- Resource for specialized legal inference (high level of abstraction)
- Support of knowledge acquisition
- Information retrieval
Definition (incomprehensible)

- An ontology is a formal, explicit specification of a shared conceptualization”
- Studer et al.
Definition – (slightly more comprehensible)

- Legal ontologies represent legal knowledge.
- Ontologies consist of:
  - Concepts
  - Relations
  - Instances
  - Axioms
What language to use?

- OWL 2 (web ontology language)
  - Developed from RDF (resource description framework) for the Semantic Web
  - Integrated into Protégé
  - Edited by the World Wide Web Consortium (W3C).
Protege

- Developed and maintained by Stanford
- Basic visualization
- Plug-ins for greater visualization
  - GraphViz for visualization
  - View the class hierarchy either as a classical tree or a nested view for zooming in and out
LKIF

- core ontology of basic legal concepts.
- Concepts such as actions, transactions, beliefs, intentions, expressions and norms.
What are the parts?

- **Class**: concept
  - Abstraction for objects with common properties
  - Area of law
  - Type of Law
- **Object**: member of a class
  - Tort
  - Case law
- **Instance**: the relationship between an object and a class.
More parts...

- Classes can have subclasses:
  - Strict liability is a subclass where tort is the class.

- Property (or an attribute)
  - Tort law: was there a duty? Duty is an attribute of tort.
Class hierarchy: Type_of_Research_Problem

- Thing
  - Type_of_Research_Problem
    - Area_of_Law
    - Final_Product
    - Legal_Action
    - Type_of_Law
    - Type_of_Research_Materials