

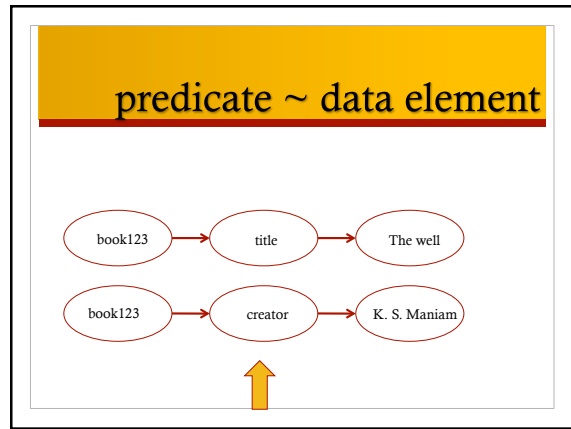
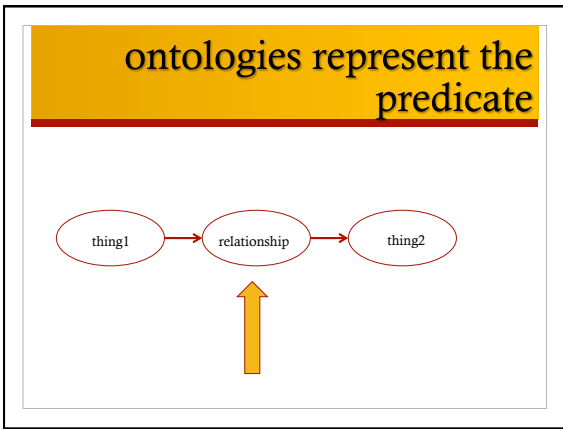

Ontologies

aka: your metadata elements

“ontology” / “vocabulary” / “term” / “element”

“... vocabularies define the concepts and relationships (also referred to as “terms”) used to describe and represent an area of concern...” (W3C)

stated simply:
ONTOLOGY is the formal term for VOCABULARY,
which is a fancier term for TERM

Elements v. Instances

Something to keep in mind

Elements

dc:title (an element) (element definition)

Term Name:	title
URI:	http://purl.org/dc/terms/title
Label:	Title
Definition:	A name given to the resource.
Type of Term:	Property
Refines:	http://purl.org/dc/elements/1.1/title
Version:	http://dublincore.org/usage/terms/history/#titleT-002
Has Range:	http://www.w3.org/2000/01/rdf-schema#Literal

Instances

Instance data

dc:title = "Steve Jobs"

or

<dc:title>Steve Jobs</dc:title>

Elements

Instances

245 10 \$a Steve Jobs / \$c by Walter Isaacson.

defining your elements: text

defining your elements: XML schema

```
<?xml version="1.0"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="note">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="to" type="xs:string"/>
        <xs:element name="from" type="xs:string"/>
        <xs:element name="heading" type="xs:string"/>
        <xs:element name="body" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

ACTIONABLE

defining your elements: RDF (or OWL)

```
dc:title a rdf:Property;
rdfs:label "Title"@en;
dc:hasVersion <http://dublincore.org/usage/terms/history/#titleT-002>;
dc:issued "2008-01-14"^^xsd:date;
dc:modified "2010-10-11"^^xsd:date;
rdfs:comment "A name given to the resource."@en;
rdfs:isDefinedBy dc;
rdfs:range rdfs:Literal;
rdfs:subPropertyOf <http://purl.org/dc/elements/1.1/title>
```

ACTIONABLE...but in a different way

defining your elements: RDF (or OWL)

```

<!-- Property: Title -->
<rdf:Description rdf:about="http://rdvocab.info/Elements/title">
<rdfls:isDefinedBy rdf:resource="http://rdvocab.info/Elements"/>
<reg:status rdf:resource="http://metadataregistry.org/uri/RegStatus/1002"/>
<reg:name xml:lang="en">title</reg:name>
<rdfls:label xml:lang="en">Title</rdfls:label>
<skos.definition xml:lang="en">A word, character, or group of words and/or characters that names a resource or a work contained in it.</skos.definition>
<rd:type rdf:resource="http://www.w3.org/1999/02/22-rdf-syntax-ns#Property"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/titleProper"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/otherTitleInformation"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/parallelTitleProper"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/parallelOtherTitleInformation"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/variantTitleForTheWork"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/earlierTitleProper"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/laterTitleProper"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/keyTitle"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/abbreviatedTitle"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/titleManifestation"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/titleOfTheWork"/>
<reg:hasSubproperty rdf:resource="http://rdvocab.info/Elements/variantTitle"/>
</rdf:Description>
</rdf:RDF>
    
```

RDA

Differences

XML	RDF/OWL
<ul style="list-style-type: none"> full set of metadata elements includes constraints (maximum, minimum, etc.) instance is a record 	<ul style="list-style-type: none"> individual properties includes relationships between properties instance is a statement

Similarities (XML, RDF)

- all elements are defined in a machine-actionable way
- mix 'n match – can use elements from different namespaces

Object Property: **bibo:degree**

<http://purl.org/ontology/bibo/degree>

Asserted Object Property Hierarchy

- bibo:degree**

Annotations (5)

- editorialNote: "We are not defining, using an enumeration, the range of the **bibo:degree** to the defined list of **bibo:ThesisDegree**. We won't do it because we want people to be able to define new degrees if needed by some special usecases. Creating such an enumeration would restrict this to happen." (en)
- isDefinedBy: "http://purl.org/ontology/bibo/" (anyURI)
- term_status: "unstable"
- comment: "The thesis degree." (en)
- label: "status" (en)

Domains (1)

- bibo:Thesis

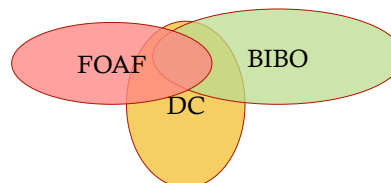
Ranges (1)

- bibo:ThesisDegree

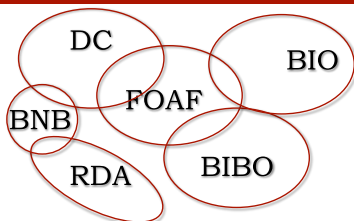
Some useful ontologies

- Dublin Core – general documents, intellectual resources
- BIBO (Bibliographic Ontology) – academic articles and other resources
- FOAF (Friend of a Friend) – people, relationships
- BIO – biographical events
- GeoNames – places
- RDA elements
- MADS – for authority files
- FRBRer – official IFLA version
- ISBD – official IFLA version

Ontologies are “mix ‘n match”



British National Bibliography in RDF

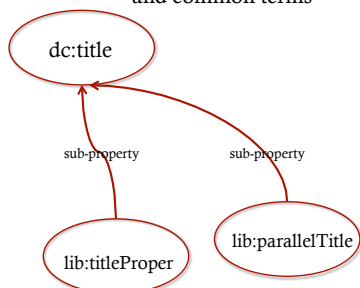


Connecting to the “cloud”

dc:title

#1 Use existing and common terms

#2 Create relationships to existing and common terms



Exercise 5a: Properties



- This is a dog named Dewey.
- His breed is golden retriever.
- His birthday is 12/25.
- His date of birth is 12/25/2004.
- He lives in Berkeley, California
- This photo was taken at the University of California in Berkeley.