

Linked Data Models and Their Implications for Search

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Linked data: RDF and OWL

Simple basic structure:



Each entity (subject or object) can belong to a class

Classes can have subclasses or hierarchy

Each predicate can belong to a property/sub-property hierarchy

Predicates can be constrained or unconstrained

Linked data vocabularies define entity classes and predicates

Validating linked data

Linked data can say anything about anything — BUT:

Entity classes and element constraints enable a measure of validation

Predicate constraints can be compared for inconsistency

Entity class can be compared to an element domain or range constraint

Predicates can be defined as required or repeatable by an application profile

Linked data vocabularies focus on predicates to convey semantics

Dublin Core linked data

Dublin Core and Dublin Core Terms are linked data vocabularies

DC's LD subject is always the resource being described

DC 1.1 defines unconstrained predicates

DC Terms vocabulary defines entity classes and range-constrained predicates

BIBFRAME linked data

BIBFRAME is a linked data vocabulary

BF defines entity classes for objects

BF defines elements for describing Works, Instances, and Items

BF uses some loosely constrained elements, e.g., used with Work, Instance, or Item

RDA linked data

RDA is a linked data vocabulary

RDA defines resource (WEMI) and agent (CPF) entity classes

RDA defines constrained and unconstrained forms of predicates (elements)

Use of constraints for both domain and range requires definition of many, many elements

RDA does not specify the declaration of an entity's class in its description

RDA favors the use of constrained predicates

Implications for search

Entity classes determine indexing options and search focus

Loose constraints on predicates mean looser entity specification for search

Constraints on predicates support more articulated indexing and complex SPARQL queries

Compare the MARC model to RDF:

100 Caesar, Julius | \$e author | 240 De bello civile

Caesar, Julius | 100 \$e author 240 | De bello civile