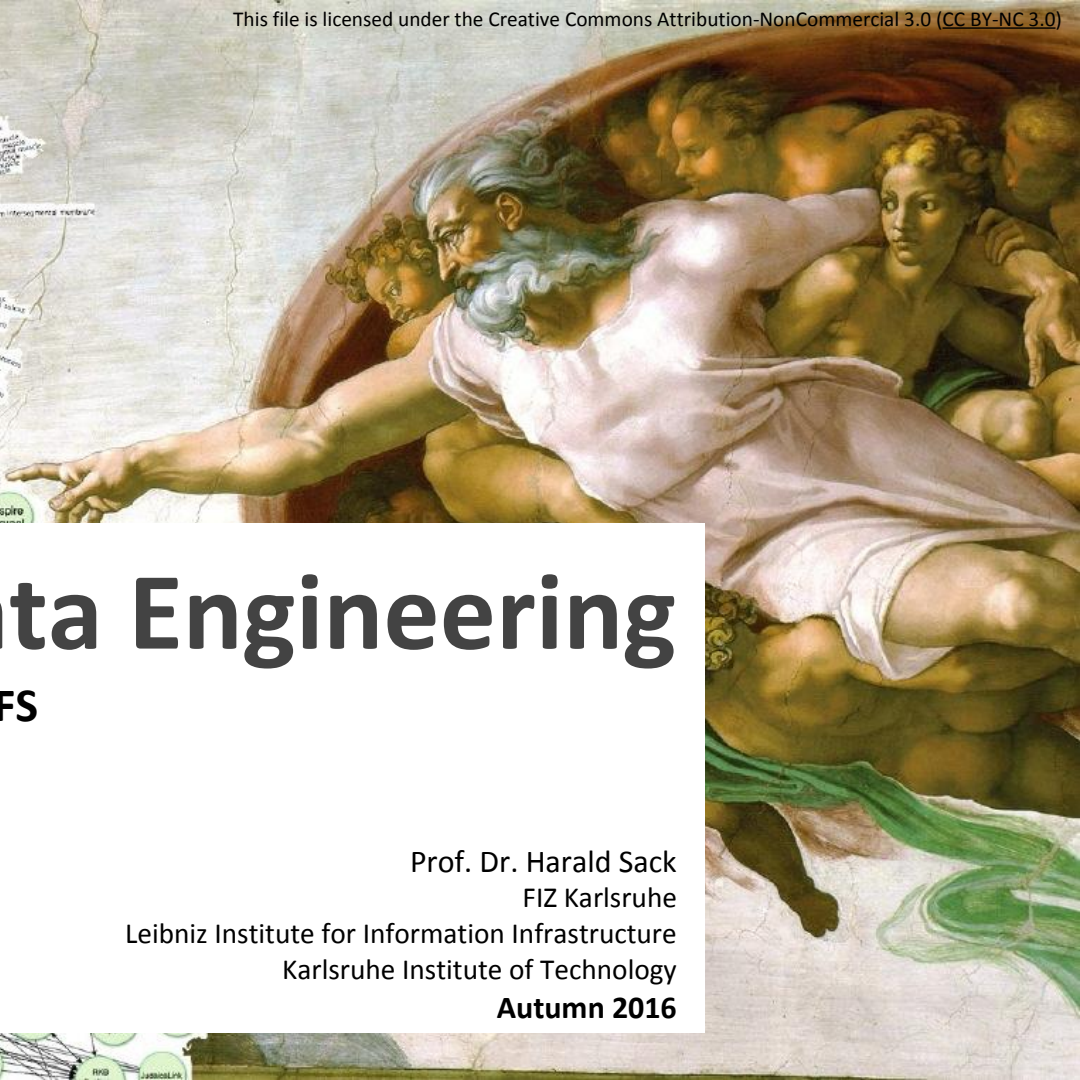




Lecture 2: RDF and RDFS

2.4 RDF Reification



Leibniz Institute for Information Infrastructure
Karlsruhe Institute of Technology
Autumn 2016

The Semantic Web Technology Stack (not a piece of cake...)

Most apps use only a subset of the stack

Querying allows fine-grained data access

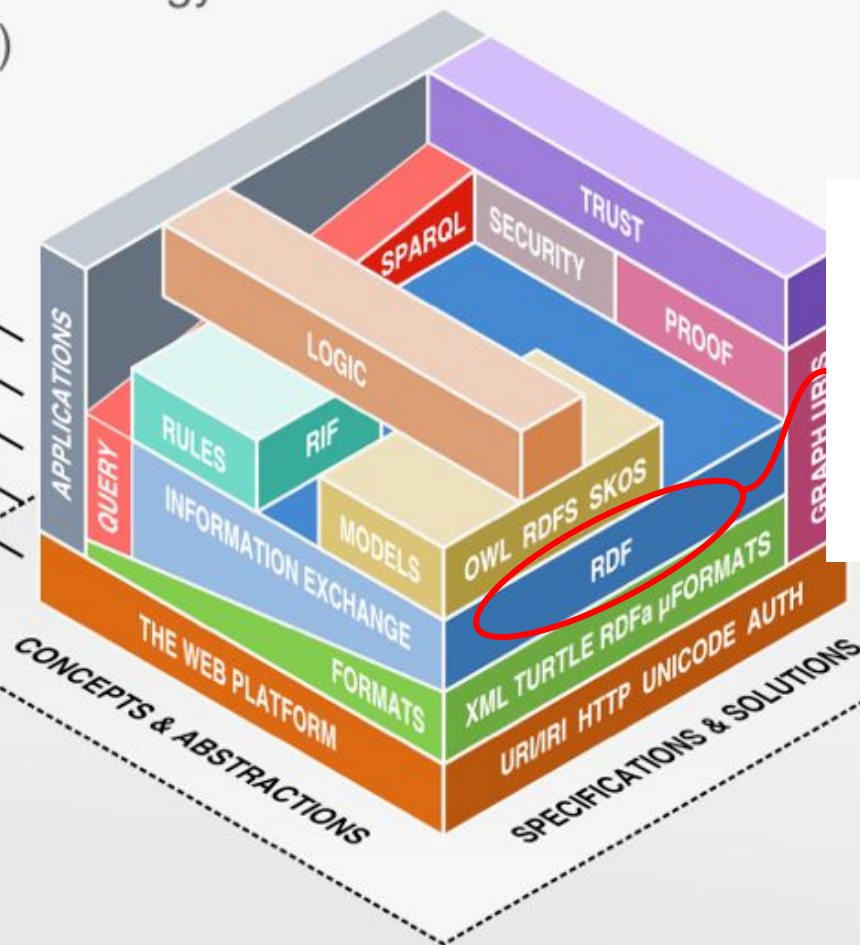
Standardized information exchange is key

Formats are necessary, but not too important

The Semantic Web is based on the Web

Linked Data uses a small selection of technologies

LINKED DATA



Resource
Description
Framework
(RDF)



“My dear Watson,
...I suppose that it was
the gardener who has
killed the butler!”

RDF Reification

- RDF also permits interleaving of statements, i.e. to make statements about statements
- Example:
 - Sherlock Holmes supposes that the gardener has killed the butler

- **Part 1:** the gardener has killed the butler

`ex:Gardener ex:hasKilled ex:butler .`

- **Part 2:** Sherlock Holmes supposes...

`dbpedia:Sherlock_Holmes ex:supposes ????`

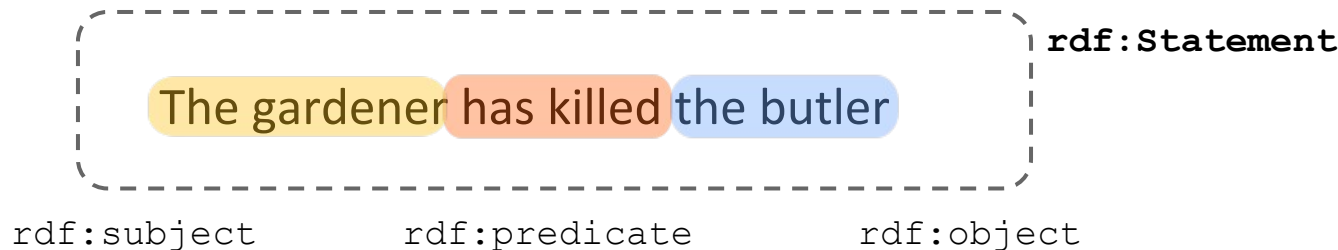
`@prefix dbpedia <http://dbpedia.org/resource/> .`

`@prefix ex: <http://example.org/Crimestories#> .`

- **rdf:Statement**

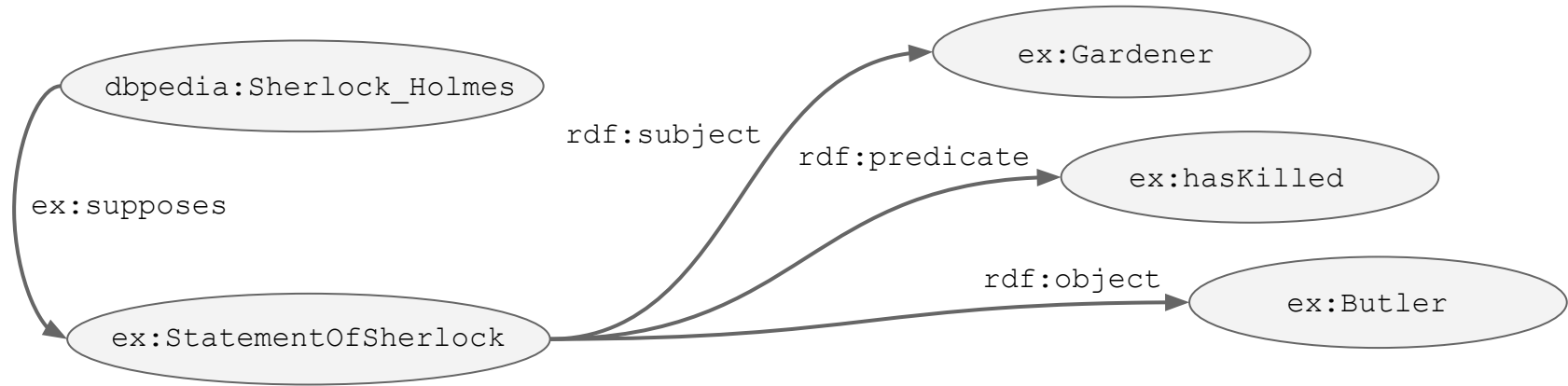
defines an RDF statement consisting of subject, predicate, object

- `rdf:subject` - the described resource
- `rdf:predicate` - the original property
- `rdf:object` - the value of the property



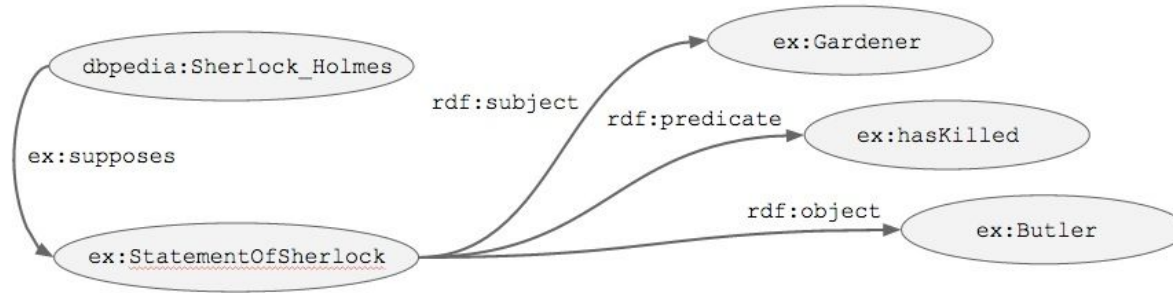
RDF Reification

Sherlock Holmes supposes that the gardener has killed the butler



```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .  
@prefix dbpedia <http://dbpedia.org/resource/> .  
@prefix ex: <http://example.org/Crimestories#> .
```

RDF Reification

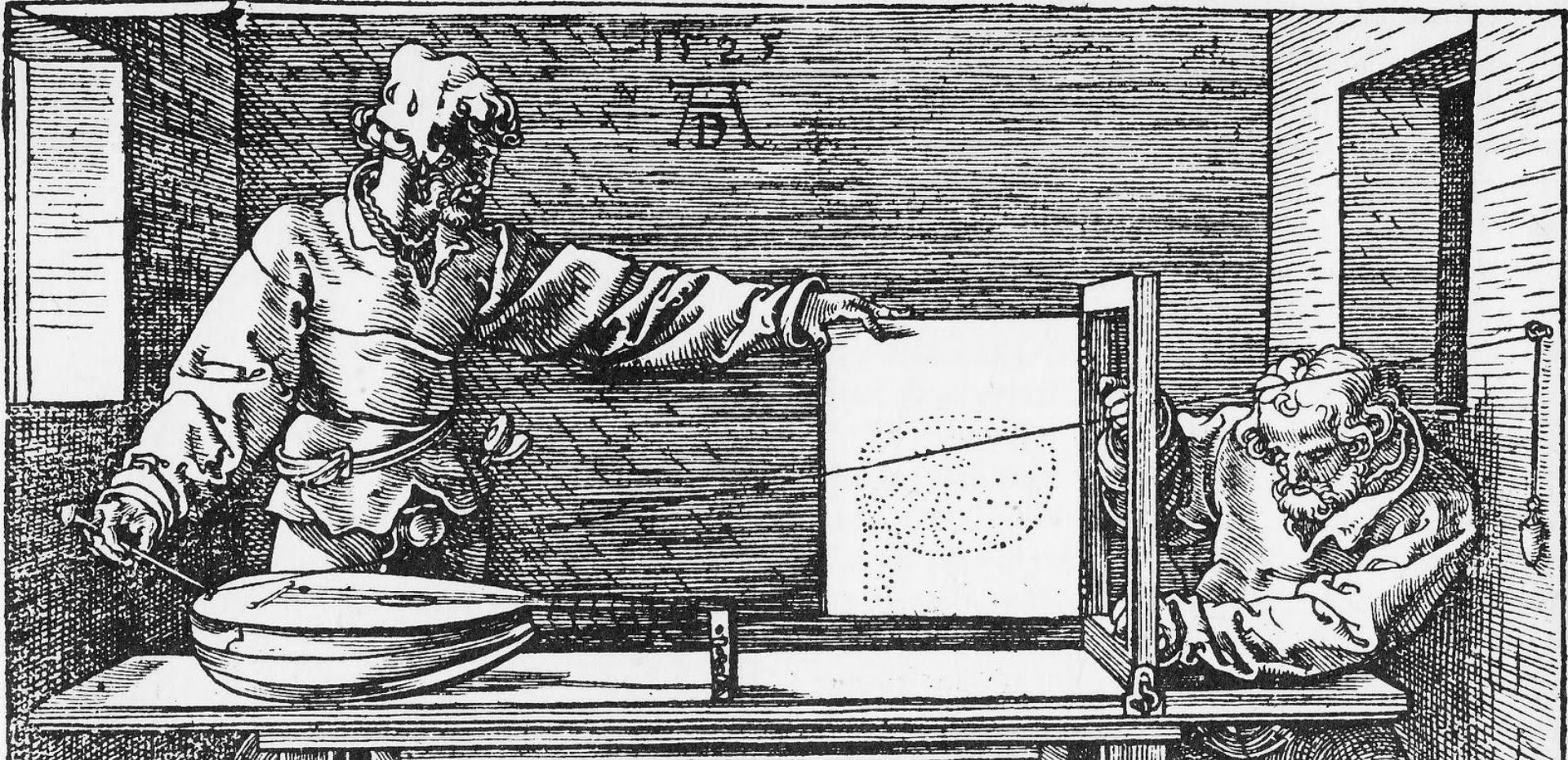


```
@prefix dbpedia: <http://dbpedia.org/resource/> .  
@prefix rdf:     <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .  
@prefix ex:      <http://example.org/Crimestories#> .
```

```
dbpedia:SherlockHolmes ex:supposes ex:StatementOfSherlock .  
ex:StatementOfSherlock a rdf:Statement ;  
    rdf:subject    ex:Gardener ;  
    rdf:predicate ex:hasKilled ;  
    rdf:object     ex:Butler .
```

RDF Reification

- what is the use of reification?
 - modeling **data provenance**
 - formalizing statements about **reliability** and **trust**
 - define **metadata** about statements
- **but you should be careful....**
 - with reification relations can be transformed into classes/instances
(type conflicts)
 - definition of **infinite recursions** and **cycles**



Next: 05 - Model Building with RDFS

OpenHPI - Linked Data Engineering - Lecture 2: RDF and RDFS