

# Acknowledgements

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# Citations and References



- ▶ Citation analysis is defined as the evolution and interpretation of the citations received by articles scientist universities, countries and other aggregates of scientific activity, used as a measure of scientific influence and productivity (Insights, 2013)
- ▶ References are the views that come from external sources. These references safeguard the copyright of the author guaranteeing the law and show respect for the unwritten laws of scientific ethics (Insights, 2013)

# Advantages of Citations



## USER

- ▶ Abundance of scientific information on the Web
- ▶ Incorporate information into larger databases
- ▶ Authenticity and quality of a researcher's work in the context of previous works

## RESEARCHER

- ▶ It is possible to make something, for example a paper or an author, known
- ▶ Reuse of existing knowledge to implement and improve a new research topic
- ▶ Articles are upgraded in quality, based on how often they are updated with the latest information

# Disadvantages of Citations



## USER

- ▶ It is not clear why the author cited a particular resource
- ▶ The author cites his/her previous work

## RESEARCHER

- ▶ Same author's full name, but different scientific field
- ▶ Citing an expert on the field, without having read his/her work
- ▶ Citation of electronic resources is favored

# What are Linked Data?

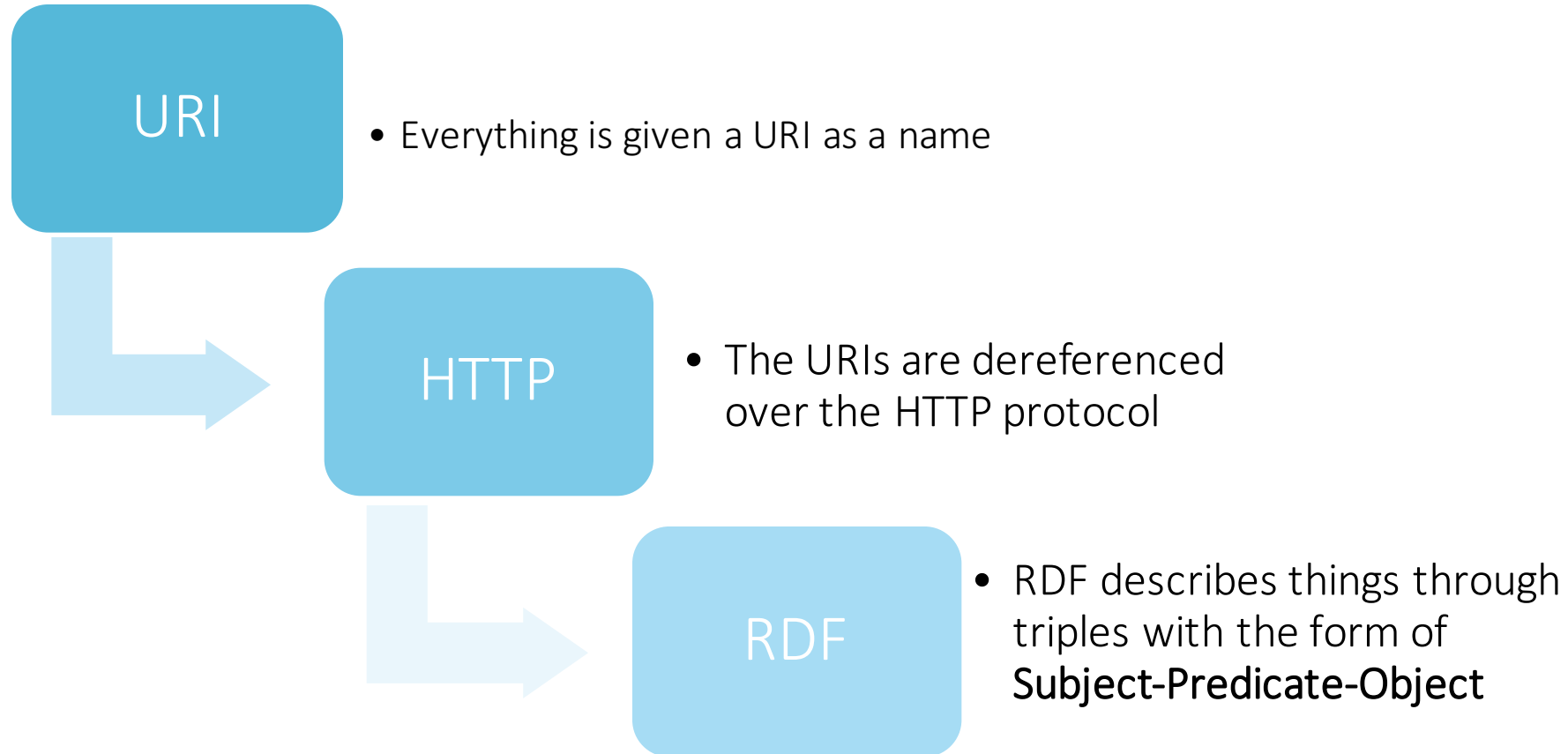
Current Web: Linking between documents (hyperlinks)

Semantic Web: Linking between data contained in the documents (Linked Data)

- ▶ *“Linked Data refers to data published on the Web in such a way that it is machine-readable, its meaning is explicitly defined, it is linked to other external data sets, and can in turn be linked to from external data sets.”*  
(Bizer, Heath, and Berners-Lee 2009)
- ▶ Linked Data technologies
  - URI (Uniform Resource Identifier)
  - HTTP (HyperText Transfer Protocol)
  - RDF (Resource Description Framework)
- ▶ Advantages
  - Interoperability
  - Applications that use data from multiple sources



# Linked Data Technologies



# CiTO Ontology

- ▶ Citation Typing Ontology
- ▶ Helps with the publication of citation data as Linked Data
- ▶ Specifies why a particular paper was used
- ▶ Calculates citation frequency
  
- ▶ Other CiTO features
  - Peer review status
  - Publication status



# Citation data to Linked data



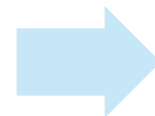
## Citation data to Linked Data

- URIs
- RDF triples
- CiTO



## Link to other semantic data

- Citation data
- Bibliographic data
- Other data



## Visualization and query

- Citation networks
- Advanced searches



# Example



- ▶ The paper “CiTO, the Citation Typing Ontology” cites the paper “Adventures in Semantic Publishing: Exemplar Semantic Enhancements of a Research Article”.
- ▶ In RDF Linked Data:

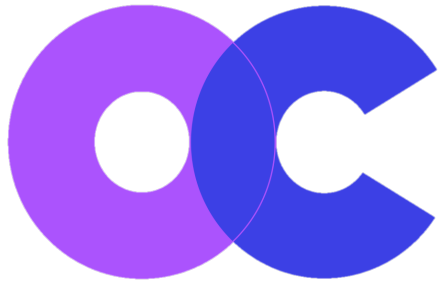
```
<http://dx.doi.org/10.1186/2041-1480-1-S1-S6>  
  cito:cites <http://dx.doi.org/10.1371/journal.pcbi.1000361>.
```

# Advantages of turning citation data to Linked Data

- ▶ Citation data can be used by other applications
- ▶ It is possible to describe the reason a publication was cited
- ▶ Linked data weave a net of connections between citation information (authors, papers, journals, etc)
- ▶ Connection of citation data to existing Linked Open Data
- ▶ Ability to perform more complex searches
- ▶ Provide advanced metrics
- ▶ Visualization of citation networks



# Interesting Projects



{ } wikicite



- ▶ An open citation database of scholarly citation data made available under a Creative Commons public domain dedication, which provides accurate bibliographic references harvested from the scholarly literature that others may freely build upon, enhance and reuse for any purpose, without restriction under copyright or database law.
- ▶ More info: <http://opencitations.net>

- ▶ Goal: build a comprehensive database of open citation and bibliographic metadata of the sources cited in Wikimedia projects, stored as linked open data, to support the sum of all human knowledge.
- ▶ More info: <https://meta.wikimedia.org/wiki/WikiCite>



Thank you

# References

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