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Virtual Biodiversity

Workshop 5: Bibliographies in a changing landscape

David King, *The Open University, UK*, David.King@open.ac.uk

BIH2013 workshop, Sapienza University, 6 September 2013

Agenda

Introduction

- The wider landscape
- The bibliography of life

ViBRANT tools

- RefBank
- ReFinder

The future

- **Linked open data**

LOD is happening

British National Bibliography as Linked Open Data

And quickly blow our own trumpet

Some of the tools they have
developed are not as good as
ours

Back to our workshop – RDF is spreading

The BBC Natural History web site
is powered by RDF,
with its own Wildlife Ontology.

Back to our workshop – and bibliographies

On 4th April 2012, the **Nature Publishing Group** published as open linked data the bibliographic records of all their journal articles dating back to 1869.

Bibliographic reference in a paper

Yves Marcoux, Élias Rizkallah (2009).
Intertextual semantics: A semantics for
information design. *Journal of the American
Society for Information Science and Technology*,
60 (9): 1895-1906. John Wiley & Sons, Inc. DOI:
10.1002/asi.21134. First published online (PDF
and HTML) 21 August 2009.

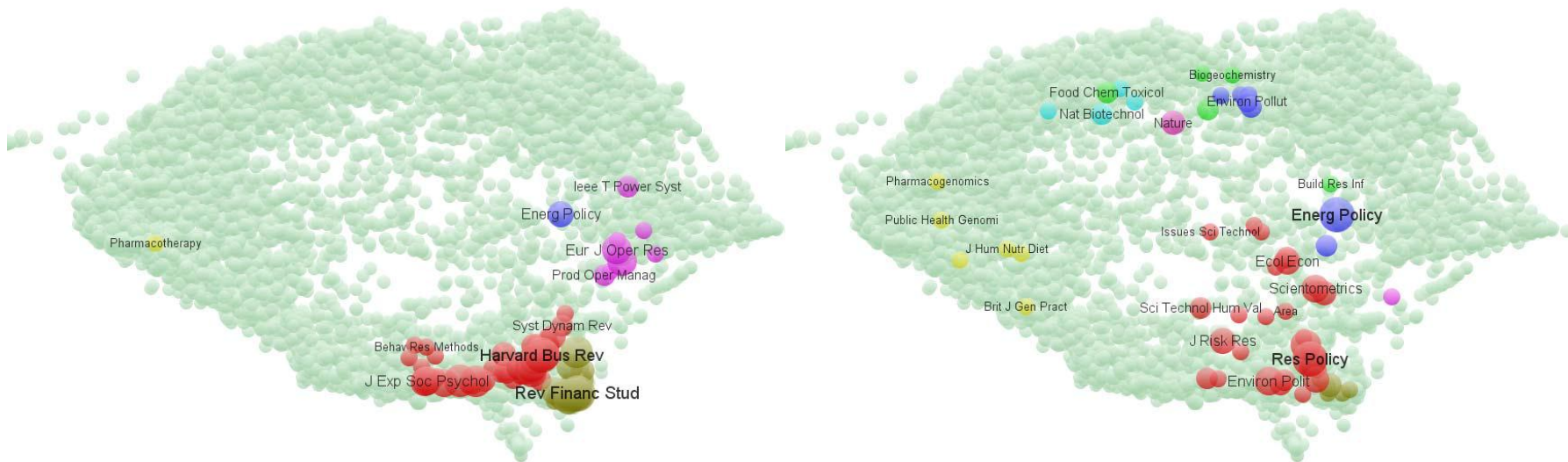
Bibliographic record as RDF (Turtle)

```

:inter textual- semantics a
  bibo: AcademicArticle
; bibo: authorList ( :marcoux :rizkallah )
; dcterms: title "Intertextual semantics: A
semantics for information design"
; dcterms: issued "2009"^^xsd: gYear
; bibo: doi "10.1002/asi.21134"
; bibo: pageStart "1895"
; bibo: pageEnd "1906"
; dcterms: hasFormat :html , :pdf
; dcterms: isPartOf [ a bibo: Issue
; bibo: issue "9"
; bibo: volume "60"
; dcterms: isPartOf [ a bibo: Journal
; dcterms: title "Journal of the American
Society for Information Science and
Technology"
; dcterms: publisher :wiley- and- sons ]] .
:html a bibo: AcademicArticle
; dcterms: format type: text/html
; dcterms: issued "21-08-2009"^^xsd: date .
:pdf a bibo: AcademicArticle
; dcterms: format type: application/pdf
; dcterms: issued "21-08-2009"^^xsd: date .
:marcoux a foaf: Person
; foaf: givenName "Yves"
; foaf: familyName "Marcoux" .
:rizkallah a foaf: Person
; foaf: givenName "Élias"
; foaf: familyName "Rizkallah" .
:wiley- and- sons a foaf: Organization
; foaf: name "John Wiley & Sons, Inc."

```

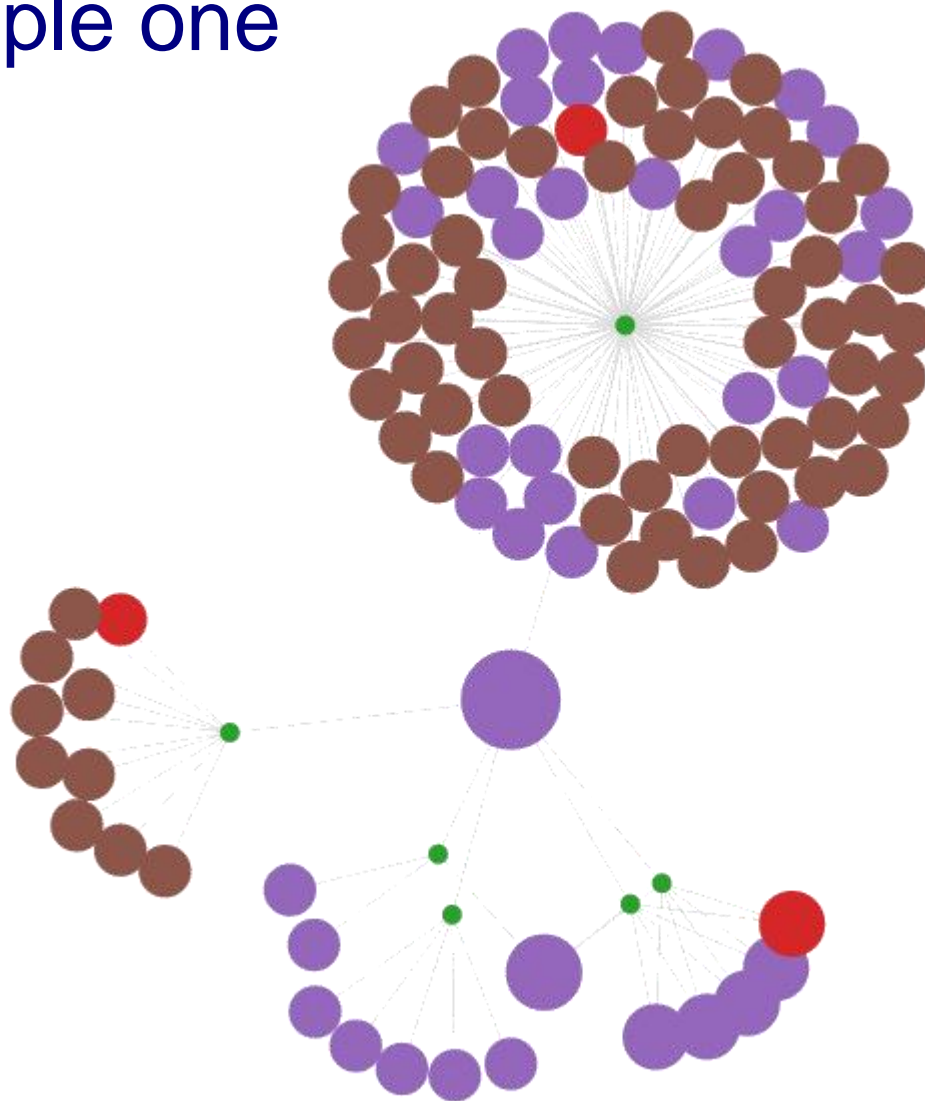
Aids analysis



Overlay maps comparing journal publication portfolios from 2006 to 2010 between the London Business School (on the left) and the Science and Technology Policy Research Unit SPRU at the University of Sussex (on the right).

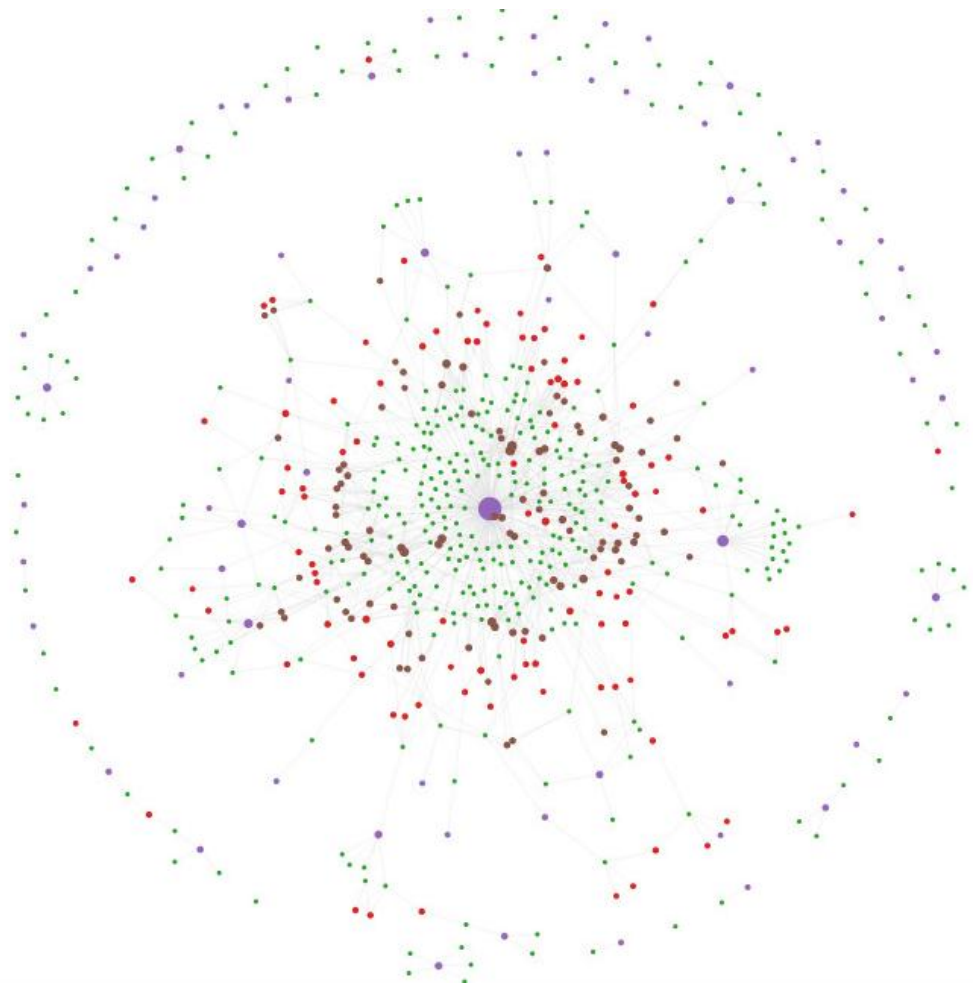
Visualisation example one

A static image showing the interactions between David Shotton and all other authors (purple) with whom he has published an article (green) in the PMC OA subset. The red dots are the journals these articles are in, and the brown are citations.



Visualisation example two

This image maps the 383 articles with Malaria as a keyword in the PMC OA, showing all 70 journals in which they are published, with links to the top 100 authors and citations.



Possible queries

Simple ones:

- papers on malaria
- papers by A N Other
- papers published in the ABC conference, 2009

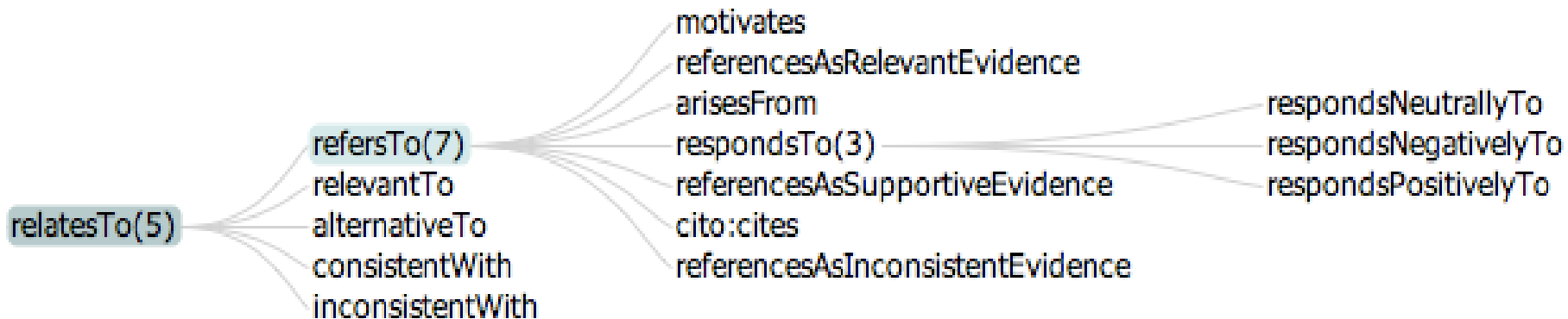
Complicated ones

- papers by the co-authors of A N Other
- papers that are cited by papers in the ABC conference, 2009

An early citation annotation schema

Category	Description
Weak	Weakness of cited approach
CoCoGM	Contrast/Comparison in Goals or Methods (neutral)
CoCoR0	Contrast/Comparison in Results (neutral)
CoCo-	Unfavourable Contrast/Comparison (current work is better than cited work)
CoCoXY	Contrast between 2 cited methods
PBas	Author uses cited work as starting point
PUse	Author uses tools/algorithms/data
PModi	Author adapts or modifies tools/algorithms/data
PMot	This citation is positive about approach or problem addressed (used to motivate work in current paper)
PSim	Author's work and cited work are similar
PSup	Author's work and cited work are compatible/provide support for each other
Neut	Neutral description of cited work, or not enough textual evidence for above categories or unlisted citation function

Another, more widely used, annotation scheme



The [SWAN](#) 2.0 (Semantic Web Applications in Neuromedicine) ontology

A more recent annotation schema

Why does this article cite that reference? (Choose as many reasons as apply by clicking on them.)

cites as authority

critiques

obtains background from

uses data from

cites for information

discusses

reviews

uses method in

corrects

extends

updates

SHOW OTHER REASONS

Other Reasons

agrees with

compiles

documents

refutes

cites as data source

confirms

gives background to

replies to

cites as evidence

contains assertion from

gives support to

retracts

cites as metadata document

credits

has reply

ridicules

cites as recommended reading

derides

includes excerpt from

shares authors with

cites as related

disagrees with

includes quotation from

supports

cites as source document

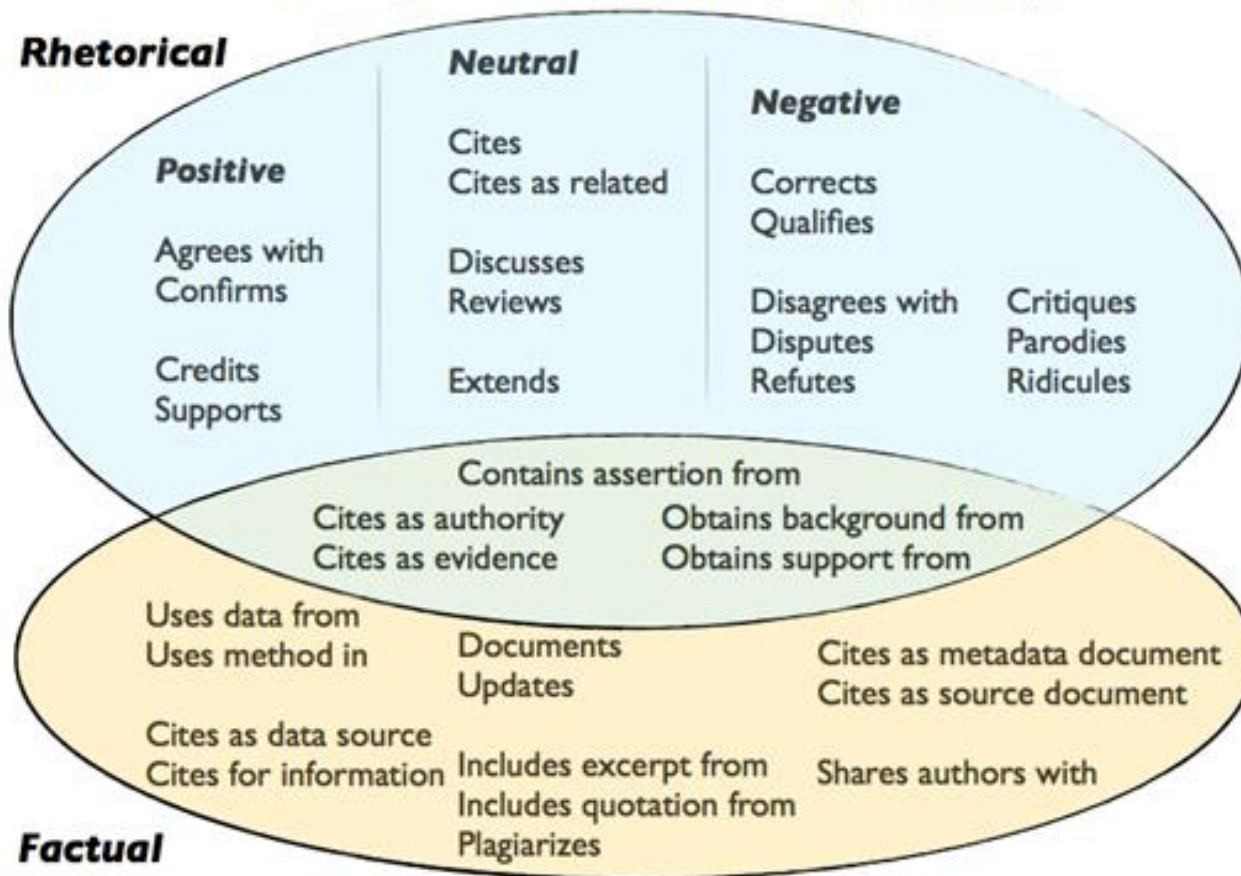
disputes

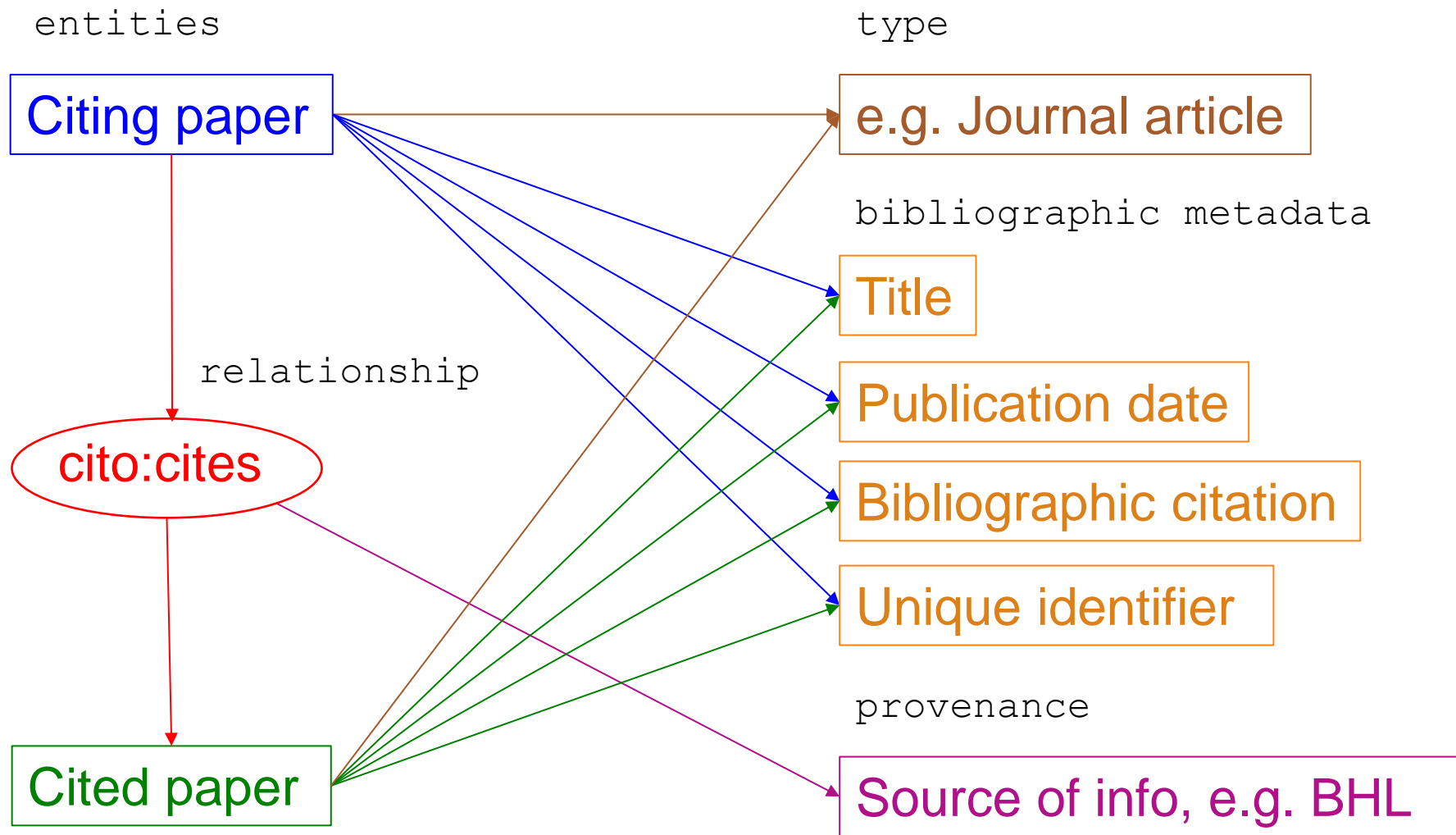
qualifies

uses conclusions from

A more recent annotation schema

Clustering of CiTO relationships by similarity





A nomenclature for references and citations

- This is the nomenclature used in SPAR (Semantic Publishing and Referencing) Ontologies

<http://purl.org/spar/>

that include CiTO, the Citation Typing Ontology

<http://purl.org/spar/cito/>

The image shows a screenshot of a PLoS Neglected Tropical Diseases article page. The page title is "Impact of Environmental Gradient on *Leptospira* in Urban Slums" by Renato B. Reis, Guilherme S. Ribeiro, and Ridalva D. M. et al. The article is published in PLoS Negl Trop Dis 2(4): e228, 2008. The page includes a "DISCUSSION" section and a "REFERENCE" section. The reference section lists a citation: "6. Ko AI, Reis MG, Ribeiro Dourado CM, Johnson WD Jr, Riley LW (1999) Urban epidemic of severe leptospirosis in Brazil. Salvador Leptospirosis Study Group. Lancet 354: 820-825." The screenshot is annotated with several boxes and arrows indicating SPAR and CiTO nomenclature. A blue box labeled "Citing article" points to the top of the page. A pink box labeled "c4o:inTextReferencePointer" points to the citation text in the discussion. A green box labeled "c4o:denotes" points to the citation text in the reference list. A pink box labeled "biro:BibliographicReference" points to the citation text in the reference list. A green box labeled "biro:references" points to the reference list. A green box labeled "cito:cites" points to the citation text in the reference list. A red box labeled "Cited article" points to the article page for "Urban epidemic of severe leptospirosis in Brazil" by Albert I Ko MD et al. in The Lancet, Volume 354, Issue 9181, 4 September 1999, Pages 820-825.

Possible queries

Simple ones:

- give me paper y that cites the paper x
- who cites paper x

Complicated ones:

- which papers are used in paper x to support the hypothesis that...
- who authored papers that reject the hypothesis in paper x

The end...
of my presentation
and of the workshop

Please send your suggestions for new
search queries to David.King@open.ac.uk

Thank you for your time
And any final questions?