



Linked Data and Cultural Heritage

Columbia University, 2 November, 2011

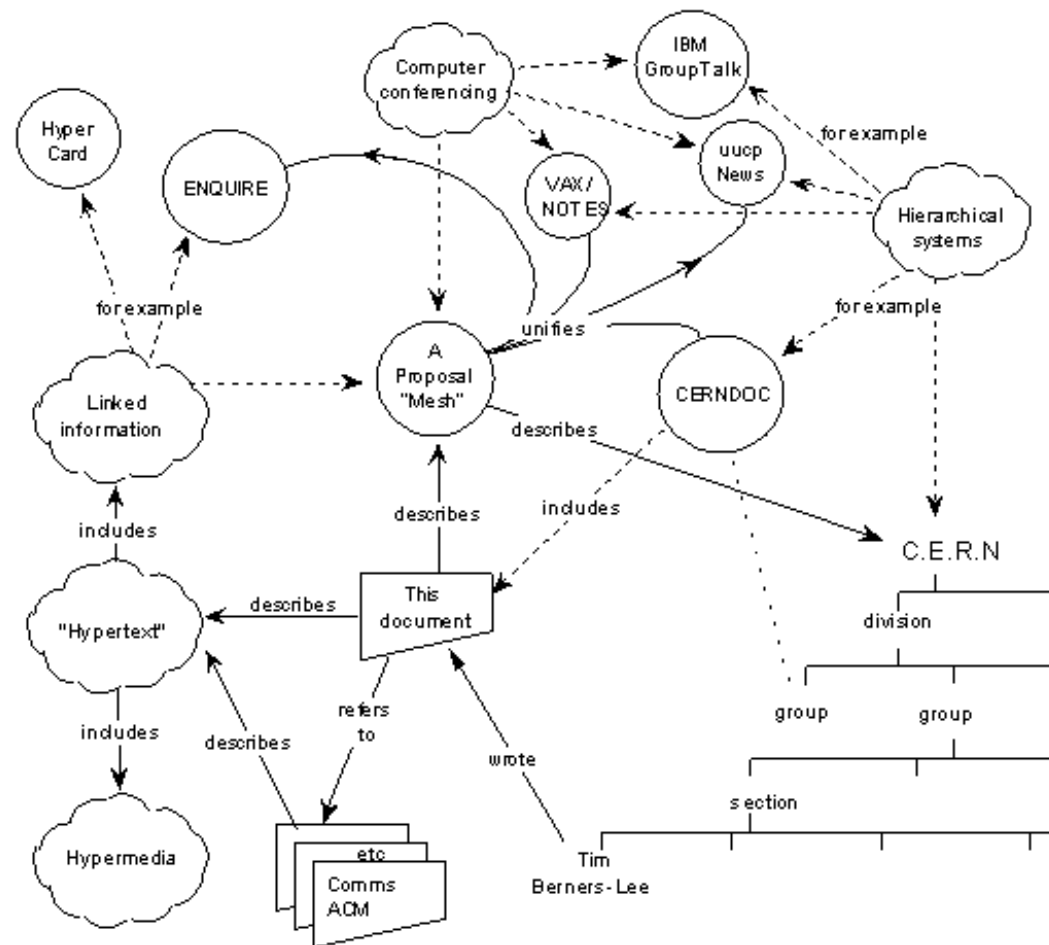
Cristina Pattuelli
Pratt Institute, New York

What Linked Data Is

“The term Linked Data refers to a set of best practices for publishing and connecting structured data on the Web.”

—Bizer, Heath, Berners-Lee, 2008

Classic Web



THEN | NOW | NEXT

Web 2.0

Mashups combine data from different sources.

It is still not possible to set hyperlinks
between data items provided by different APIs.

Web of Linked Data

Linked Data relies on an open representation framework that makes it possible to connect data from different sources into a single global data space.

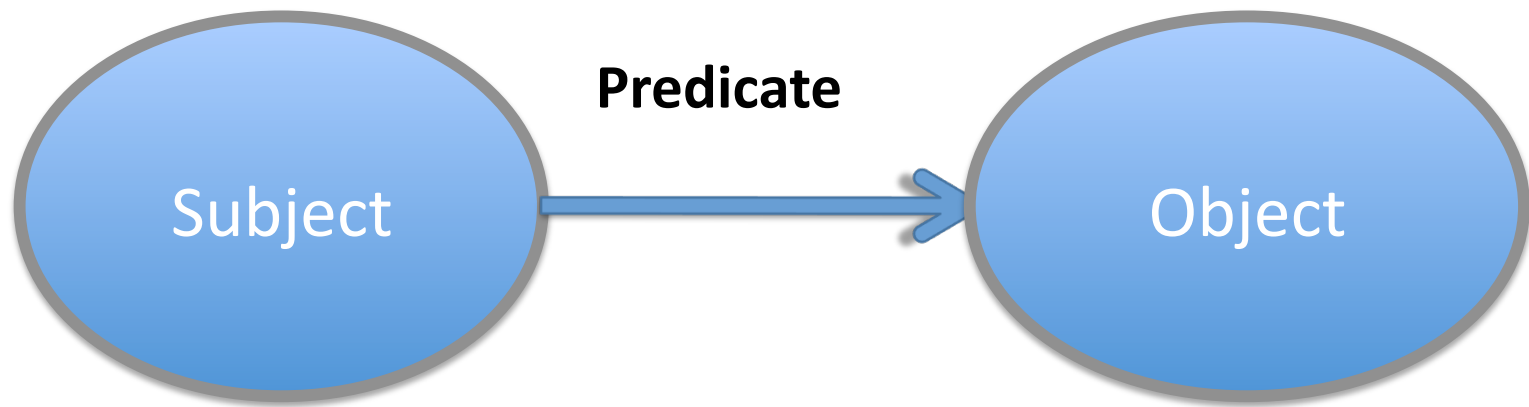
It creates new paths of access and thus new opportunities for navigation, discovery and interpretation.



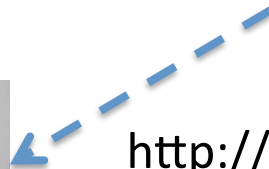
Linked Data Design

- URI is used to indentify entities;
- HTTP is the transfer protocol;
- RDF is the model used to represent data in a common format.

RDF Triple



RDF Description of Umberto Eco



http://en.wikipedia.org/wiki/Umberto_Eco

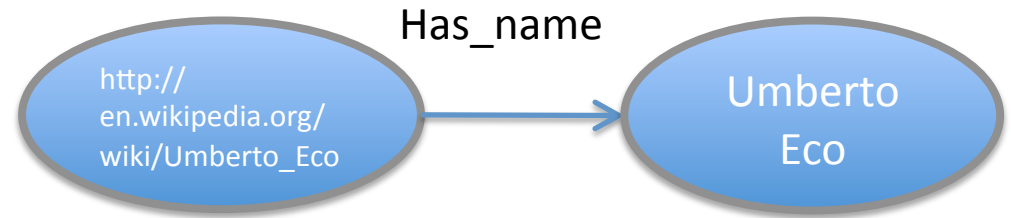
sameAs

<http://sbn.it/opacsbn/opac/iccu/authorityIT\ICCU\CFIV\006213>

sameAs

<http://sw.opencyc.org/concept/Mx4rvyKJrpwpEbGdrcN5Y29ycA>

RDF Description of Umberto Eco



Was_born in "Alessandria"

Teaches_at "University of Bologna"

Wrote "Il Trattato di Semiotica Generale"

RDF Description of Umberto Eco



Has_name “Umberto Eco”

Was_born in [Alessandria](#)

↳ Located_in [Piemonte](#)

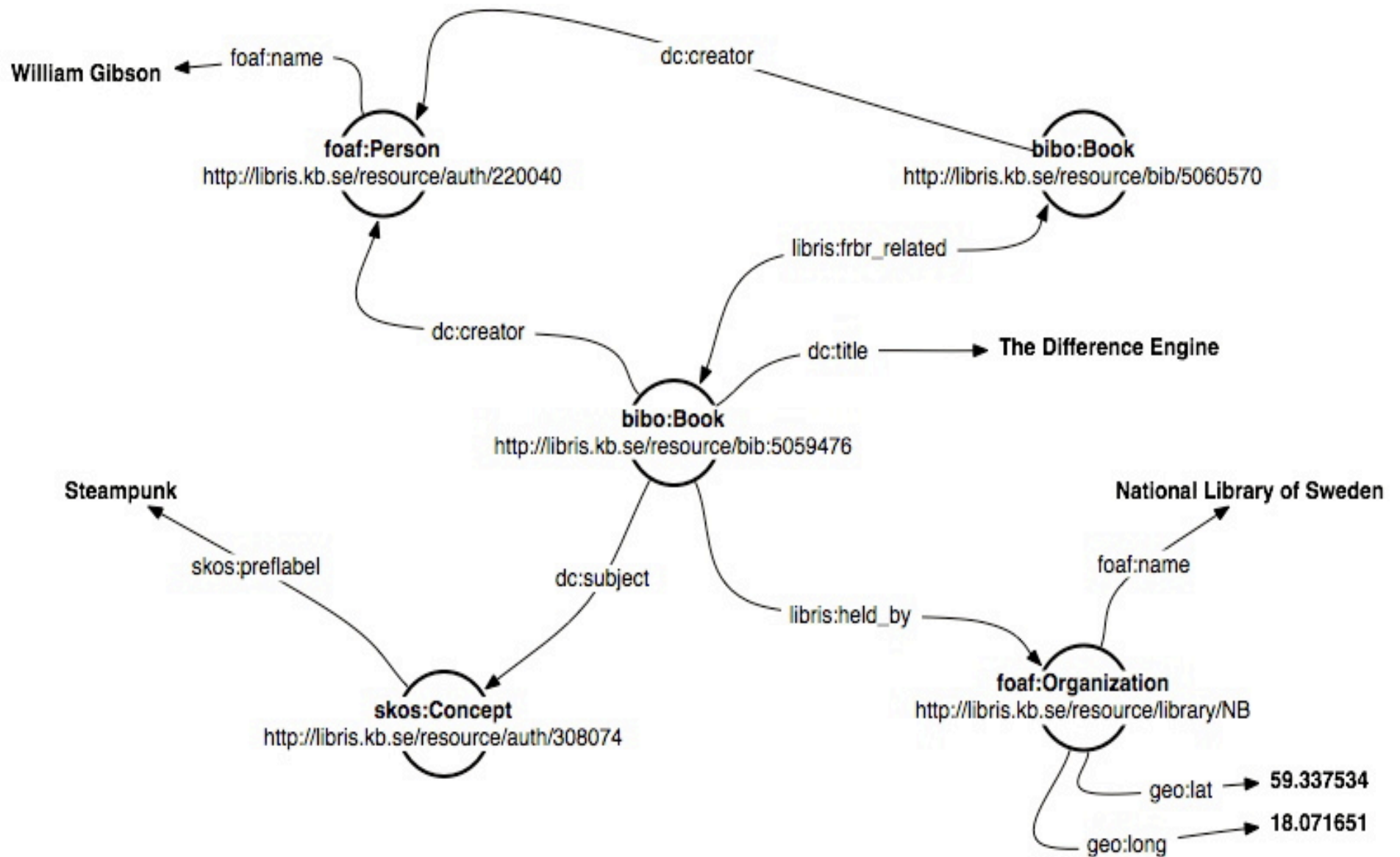
↳ Part_of [Italy](#)

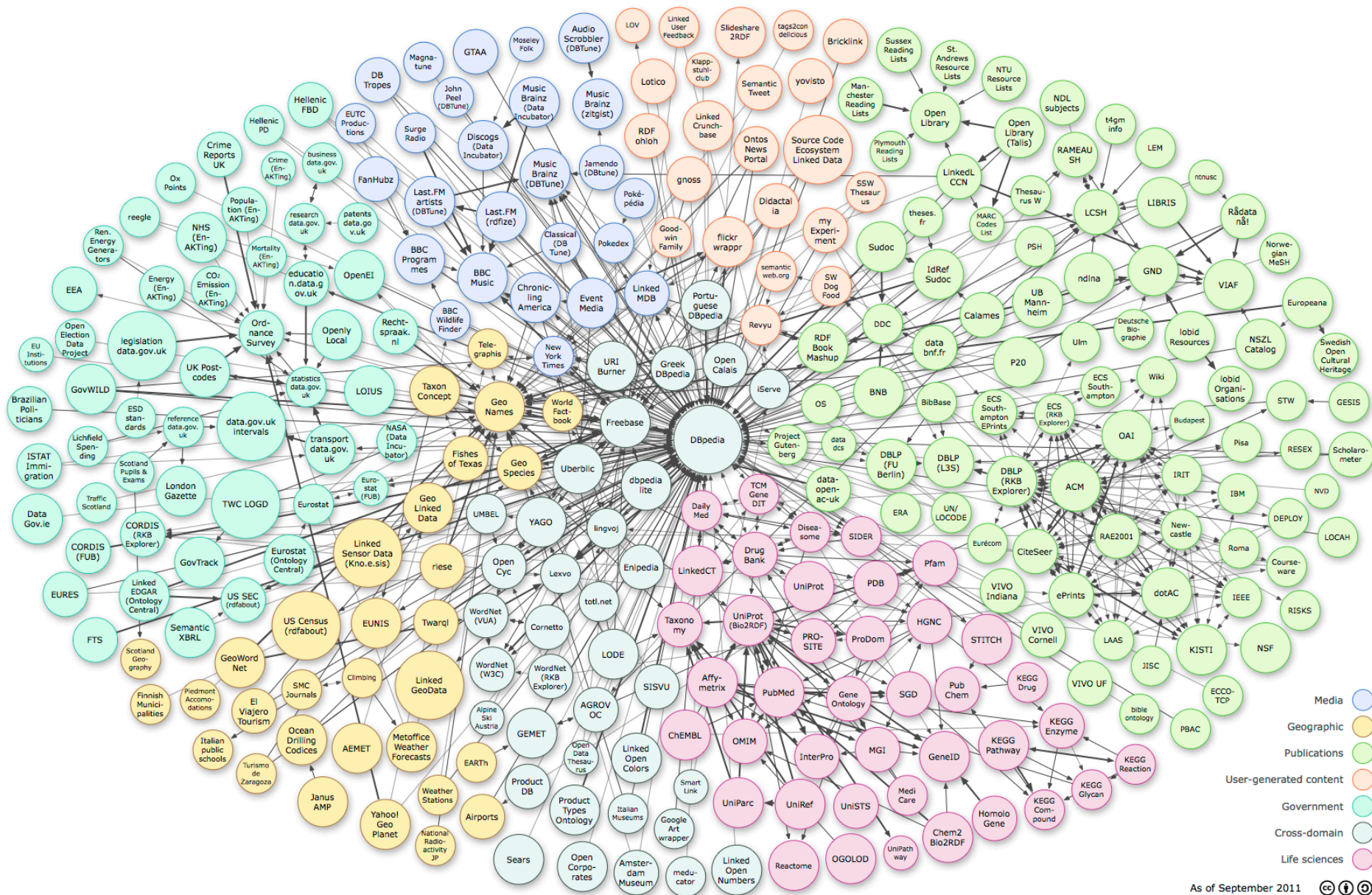
Wrote [Il Trattato di Semiotica Generale](#)

sameAs Theory of Semiotics

↳ Has_genre philosophy

Influenced_by [Charles Sanders Peirce](#)





Linking Open Data cloud diagram, by Richard Cyganiak and Anja Jentzsch. <http://lod-cloud.net/>

What do you do with a trillion triples?



http://dbpedia.org/page/Umberto_Eco



http://www.freebase.com/view/en/umberto_eco

Cultural Heritage

Active area of research.

Small and independent projects as well as national level projects.

Case studies and working prototypes.

Europeana


E-Culture MultimedialN *cultural heritage search* [login](#) | [help](#) | [admin](#) | [English](#)

[search](#) | [thesaurus](#)


This cultural search engine will give you access to artworks from several museum collections.
Type a keyword, for example: Derain, calligraphy, or 1867.

I am searching for: Work ▼


Collections




Artchive.com (>3,000 objects)




Rijksmuseum.nl (>16,000 objects)



Volkenkunde.nl (>10,000 objects)




Tropenmuseum.nl (>78,000 objects)




Bibliopolis.nl (>1,600 objects)


Vocabularies and thesauri




Getty AAT (>31.000)




Getty ULAN (>130.000)



Getty TGN (>890.000)



SVCN (Dutch ethnology, >11.000)




Princeton Wordnet (>115.000)

<http://e-culture.multimedialn.nl/demo/session/search>

Amsterdam Museum Linked Open Data

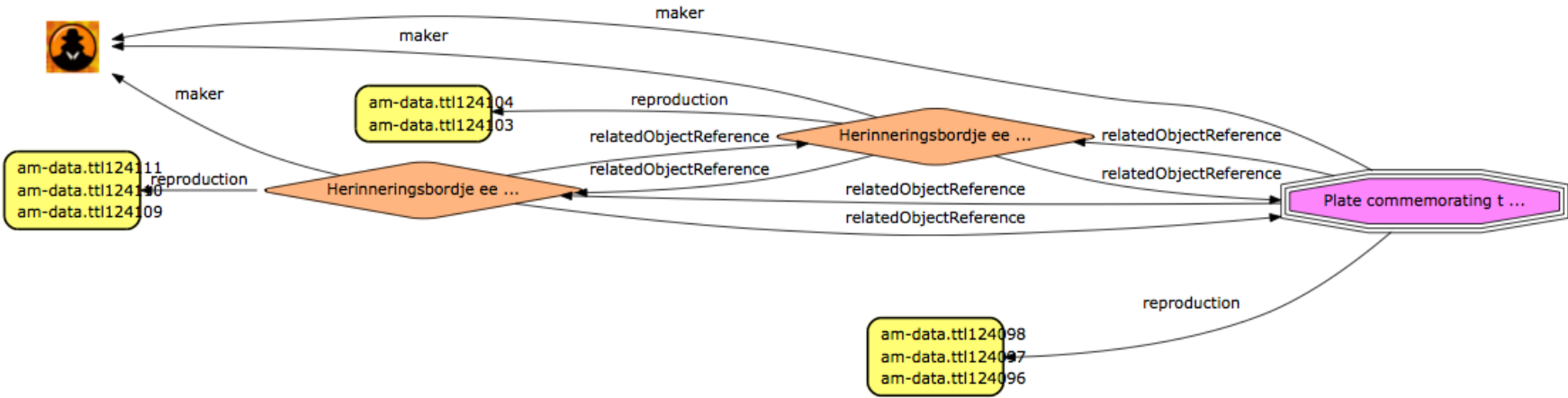
[Places](#) [Amalgame](#) [Admin](#) [Repository](#) [Query](#) [Help](#) [Login](#)

Plate commemorating the first Amsterdam-Batavia flight



am-data.ttl124095
1924 1924
hoogte 2.5 cm diameter 23.7 cm
Category: keramiekcollectie
Produced in: onbekend
Technique: beschilderd
Technique: gebakken
Technique: geglazuurd
Amsterdams Historisch Museum KA 17150

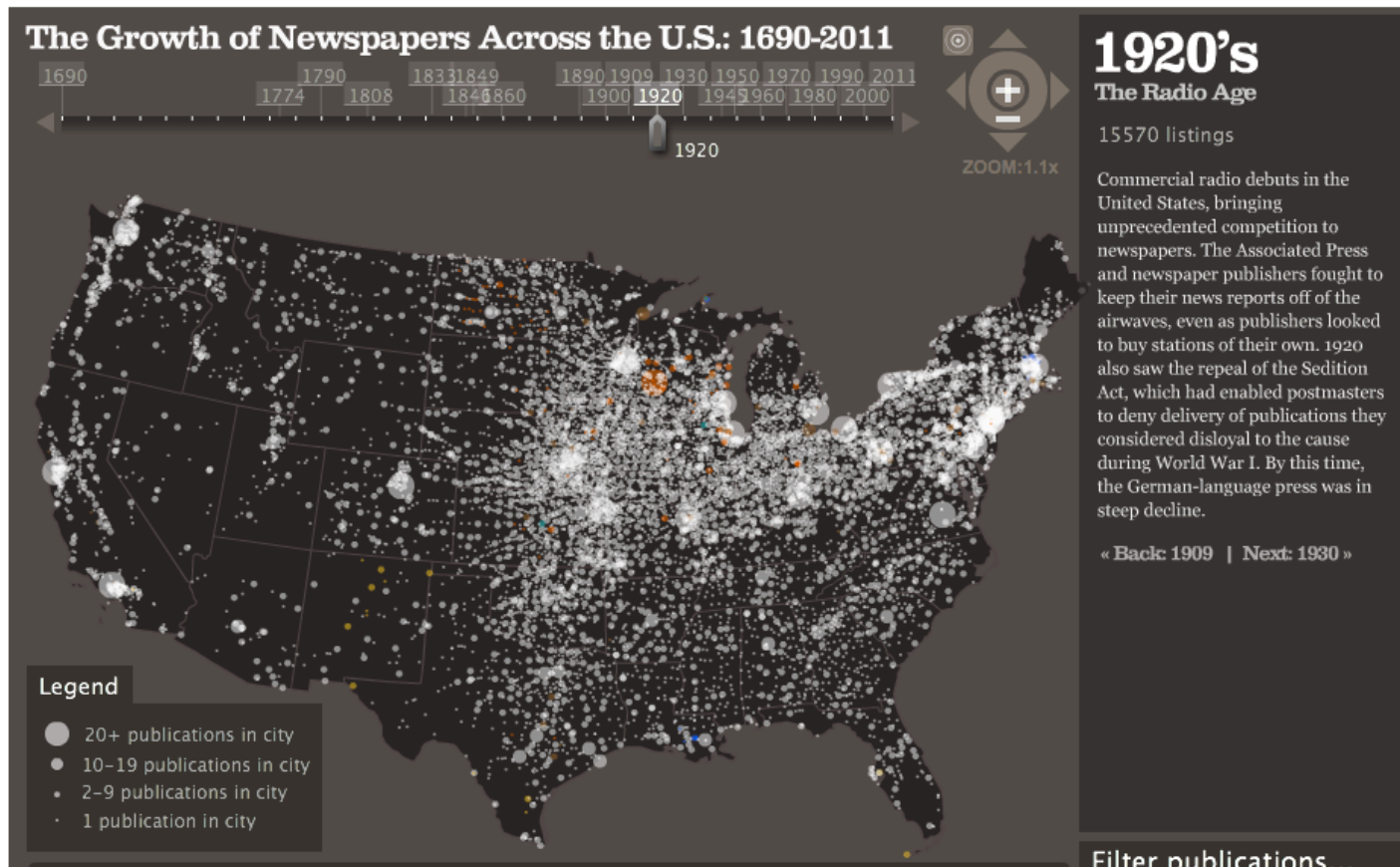
Related objects



```
graph LR
    M1((Museum Icon)) -- maker --> H1{Herinneringsbordje ee ...}
    M1 -- maker --> H2{Herinneringsbordje ee ...}
    M1 -- maker --> P{Plate commemorating t ...}
    R1[am-data.ttl124104  
am-data.ttl124103] -- reproduction --> H1
    R2[am-data.ttl124111  
am-data.ttl124110  
am-data.ttl124109] -- reproduction --> H2
    R3[am-data.ttl124098  
am-data.ttl124097  
am-data.ttl124096] -- reproduction --> P
    H1 -- relatedObjectReference --> H2
    H1 -- relatedObjectReference --> P
    H2 -- relatedObjectReference --> P
```

<http://purl.org/collections/nl/am/proxy-23182> Full view

LC's Chronicling America and Stanford's Rural West



http://www.stanford.edu/group/ruralwest/cgi-bin/drupal/visualizations/us_newspapers



Team members

Cristina Pattuelli

Chris Weller

Ben Fino-Radin

Sara Rubinow



Connected Creativity

Experimenting with the application of Linked Open Data technology to digital archives of jazz history.

Project's Objectives

To help **discover** and **give legibility** to the network of relationships among the jazz artists described in primary sources.

To provide a **new perspective** on the interpretation of archival content.

To **expose** archival data to the web and to contribute cultural heritage RDF triples to the LOD ecosystem.

“A Great Day in Harlem”



Red Allen, Buster Bailey, Count Basie, Emmett Berry, Art Blakey, Lawrence Brown, Scoville Browne, Buck Clayton, Bill Crump, Vic Dickenson, Roy Eldridge, Art Farmer, Bud Freeman, Dizzy Gillespie, Tyree Glenn, Benny Golson, Sonny Greer, Johnny Griffin, Gigi Gryce, Coleman Hawkins, J.C. Heard, Jay C. Higginbotham, Milt Hinton, Chubby Jackson, Hilton Jefferson, Osie Johnson, Hank Jones, Jo Jones, Jimmy Jones, Taft Jordan, Max Kaminsky, Gene Krupa, Eddie Locke, Marian McPartland, Charles Mingus, Miff Mole, Thelonious Monk, Gerry Mulligan, Oscar Pettiford, Rudy Powell, Luckey Roberts, Sonny Rollins, Jimmy Rushing, Pee Wee Russell, Sahib Shihab, Horace Silver, Zutty Singleton, Stuff Smith, Rex Stewart, Maxine Sullivan, Joe Thomas, Wilbur Ware, Dickie Wells, George Wettling, Ernie Wilkins, Mary Lou Williams, Lester Young



http://dbpedia.org/resource/Marian_McPartland

http://dbpedia.org/resource/Thelonious_Monk

http://dbpedia.org/resource/Mary_Lou_Williams

?

?



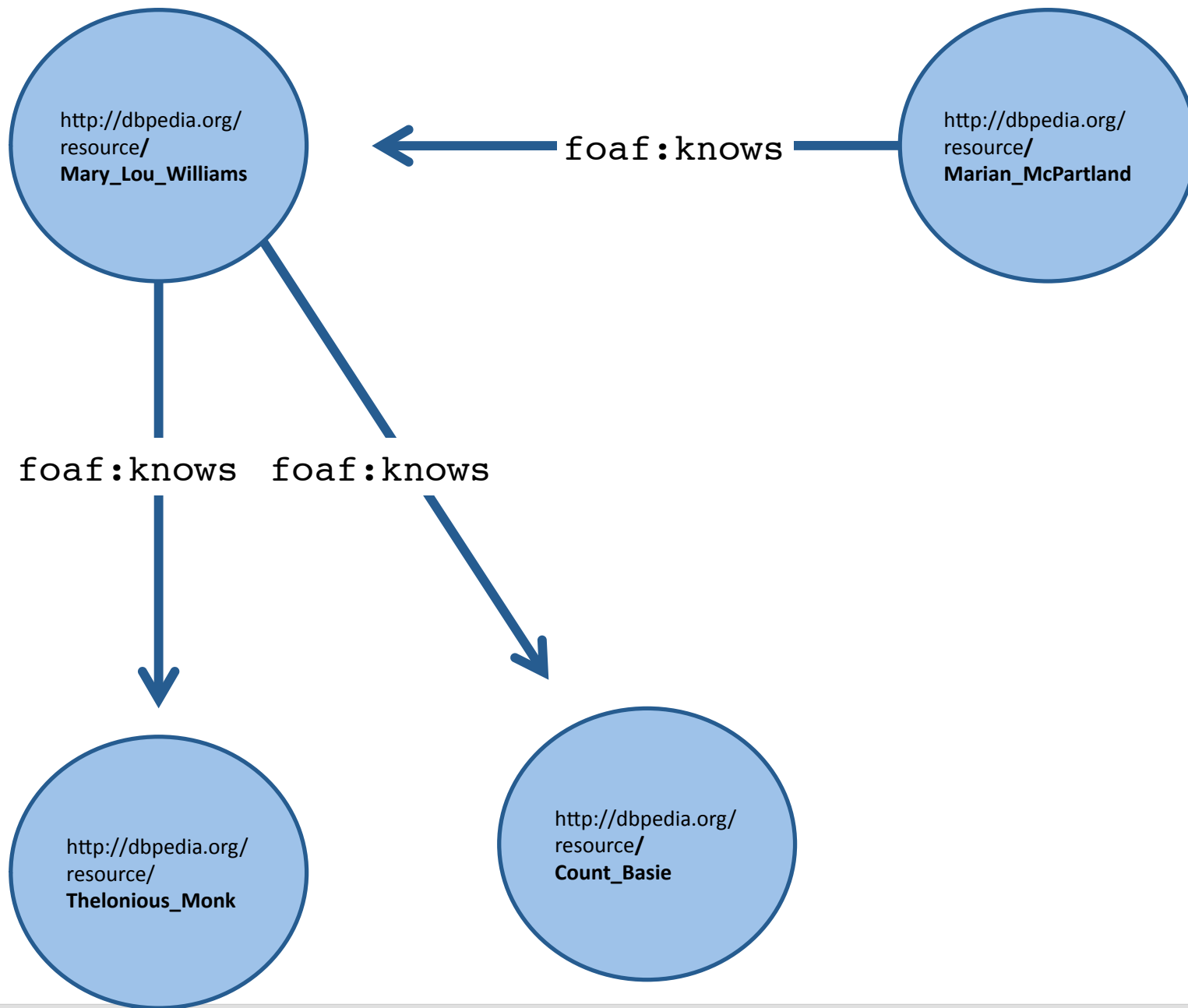
Mary Lou Williams

*“No, we jammed here. **Thelonious Monk** - I remember once one morning I got sleepy so I said, ‘I’m going to bed.’ When the guys left, the door was open and Monk rang the doorbell and he came inside [...] I screamed. He yelled too and ran out the door and ran in to the closet and the clothes fell on him...”*



Marian McPartland

*“...and this was the, like the biggest jazz festival ever. **Mary Lou Williams** played it and I played it and Toshiko Akiyoshi had her big band, and I mean it was a large event.”*



*“...the biggest jazz festival ever. **Mary Lou Williams** played it...”*

rel: knows of

*“Later on after **I met Count Basie**...”*

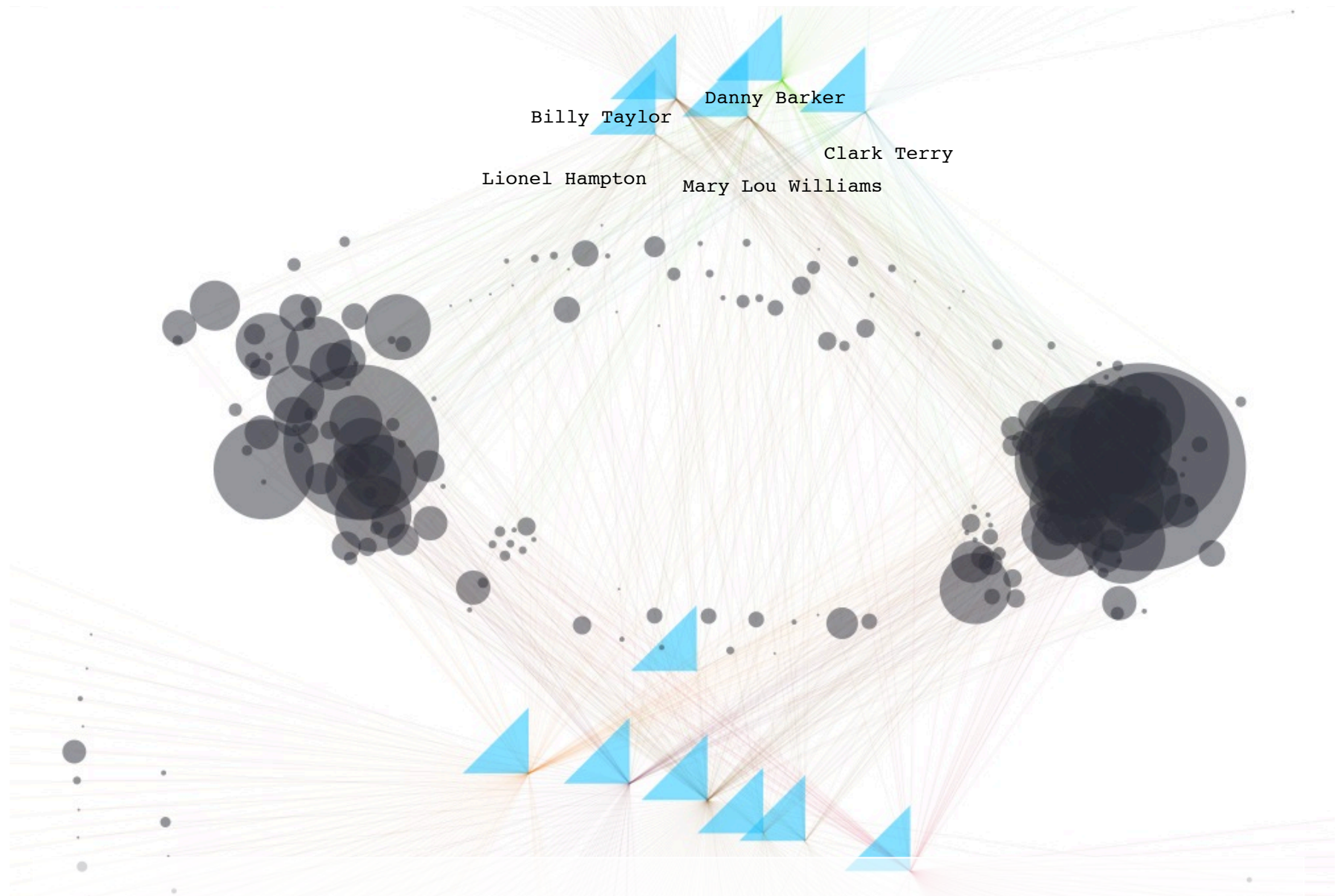
foaf: knows

*“**Jack Howard** was an influence as far as giving me strength on the piano... He taught me a lot of professional things it would have taken me years and years to learn.”*

rel: mentor of

*“No, we jammed here. **Thelonious Monk** - I remember once one morning I got sleepy so I said...”*

rel: close friend of



Social graph revealing communities and social proximities of individual jazz musicians based on `foaf:knows` relationships identified in interview transcripts.

Emergence

- A rich web of semantically linked data is emerging.
- It is largely unpredictable how this capital of linked data will be used to advance scholarly knowledge.
- The nature of Linked Data is not prescriptive.
- Best uses may have not yet been envisioned.

Thank you!



Katie Lewis

Contact: mpattuel@pratt.edu