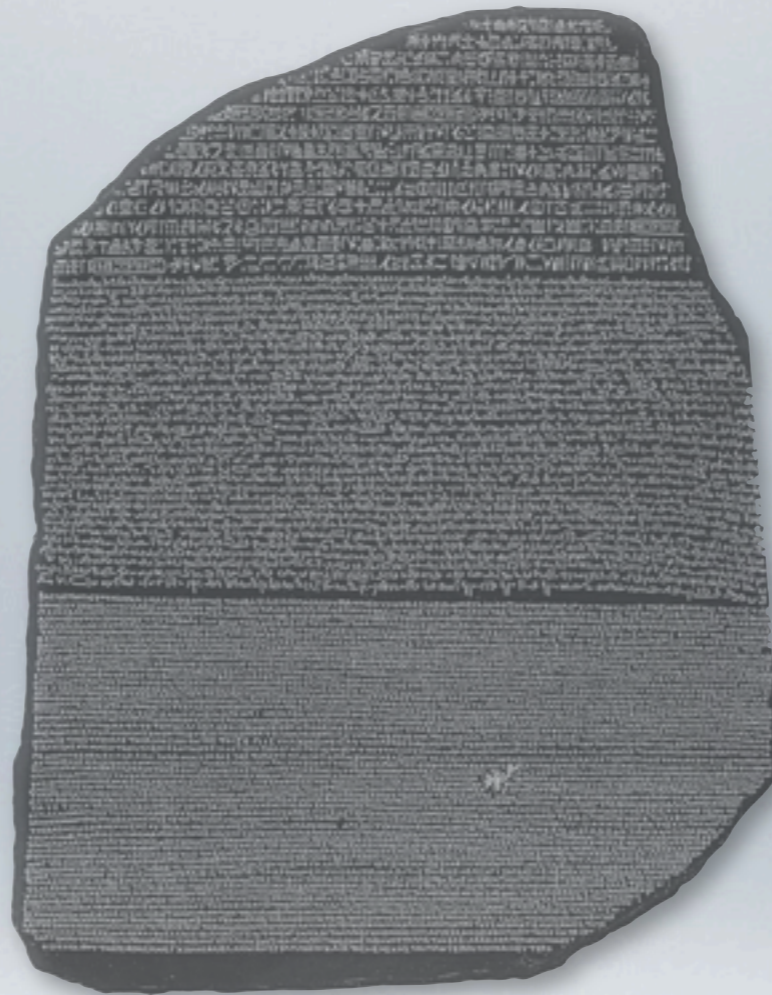


MU

RU

CA

<BARBERA@NETSEVEN.IT>
@barbz79it



LINKED OPEN DATA
IN ARTS & HUMANITIES

DARIAH FORUM, 24-25 NOV 2010, DEN HAGUE



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MENU

- ▶ Introducing Linked Data (quickly)
- ▶ What is MURUCA?
- ▶ Building a scholarly platform with muruca
 - ▶ data
 - ▶ interfaces
 - ▶ annotations
- ▶ Future





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WHY LINKED DATA?



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FANCY WEB SITES ARE NICE



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BUT



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ARE THEY REALLY ACCESSIBLE?



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QUALITY AND PEER REVIEW ARE IMPORTANT



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BUT



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QUALITY CHANGES OVER TIME, SPACE AND CULTURE



JUST A COUPLE OF EXAMPLES...

“

O re, questa conoscenza (mathema) renderà gli egiziani più sapienti e più dotati di memoria: infatti ho scoperto un pharmakon per la sapienza e la memoria. - E il re rispose: - Espertissimo (technikotate) Theuth, una cosa è esser capaci di mettere al mondo quanto concerne una techne, un'altra saper giudicare quale sarà l'utilità e il danno che comporterà agli utenti; e ora tu, padre delle lettere, hai attribuito loro per benevolenza il contrario del loro vero effetto. Infatti esse produrranno dimenticanza (lethe) nelle anime di chi impara

”

PLATO, PHAEDRUS
MYTH OF THEUTH



My boss allowed me to do it* in my spare time...

* the Web!



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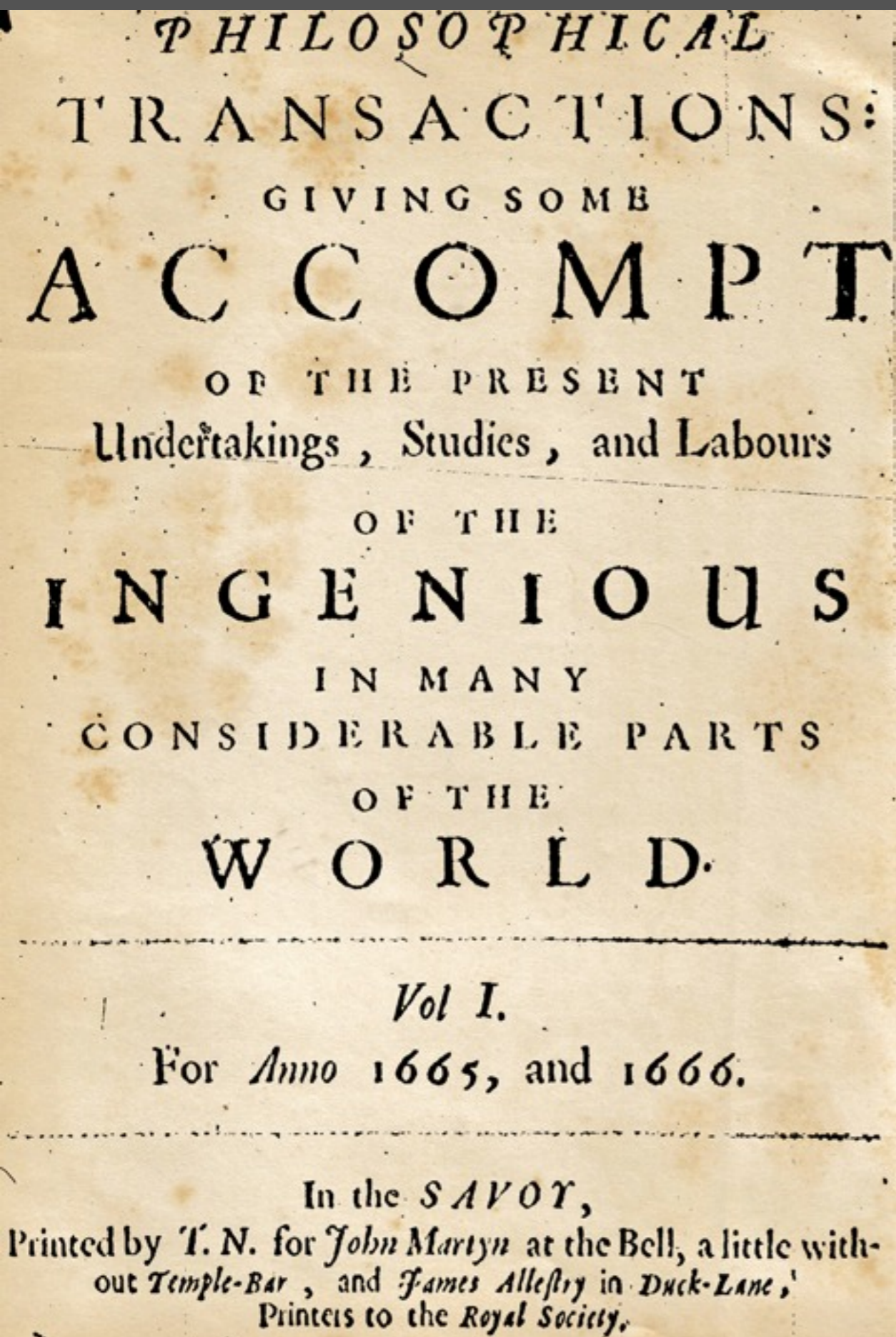


AND ALSO



RESEARCHERS ARE NO MORE ONLY IN THE ACADEMIA

* See also recent speeches of EU Commissioner M. Quinn and Europe 2020 strategy



RESEARCH IS NO MORE
ONLY HERE



RESEARCHERS ARE ALL AROUND US



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THEN



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IF OUR MISSION IS TO ADVANCE HUMAN
KNOWLEDGE



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WE CAN'T ANYMORE



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KEEP DATA HIDDEN IN OUR HARD DISKS



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NOR



IN OUR FANCY WEB SITES WITH TEI-AWARE,
CONTEXT SENSITIVE, WHATEVER SEARCH
ENGINES



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WE MUST ALLOW



PEOPLE (AND THE NEXT GENERATIONS) TO
FREELY RE-USE, RE-MIX AND RE-THINK THE
KNOWLEDGE WE ENCODED INTO MACHINES



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LOTS OF PEOPLE



WORLD:
1.668.870.408

EUROPE:
402.380.474 (~50%)

AVERAGE GROWTH
2000 - 2010:
362.3%





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WE CAN'T HIDE DATA BECAUSE

A large, cylindrical metal silo stands in a field of orange flowers. The silo is made of corrugated metal and has a small vent or pipe at the top. The background shows a landscape with mountains under a cloudy sky. The text "YOUR WEB SITE" is overlaid on the silo in a bold, red, sans-serif font.

YOUR WEB SITE

DATA IS LESS VALUABLE WHEN SILOED

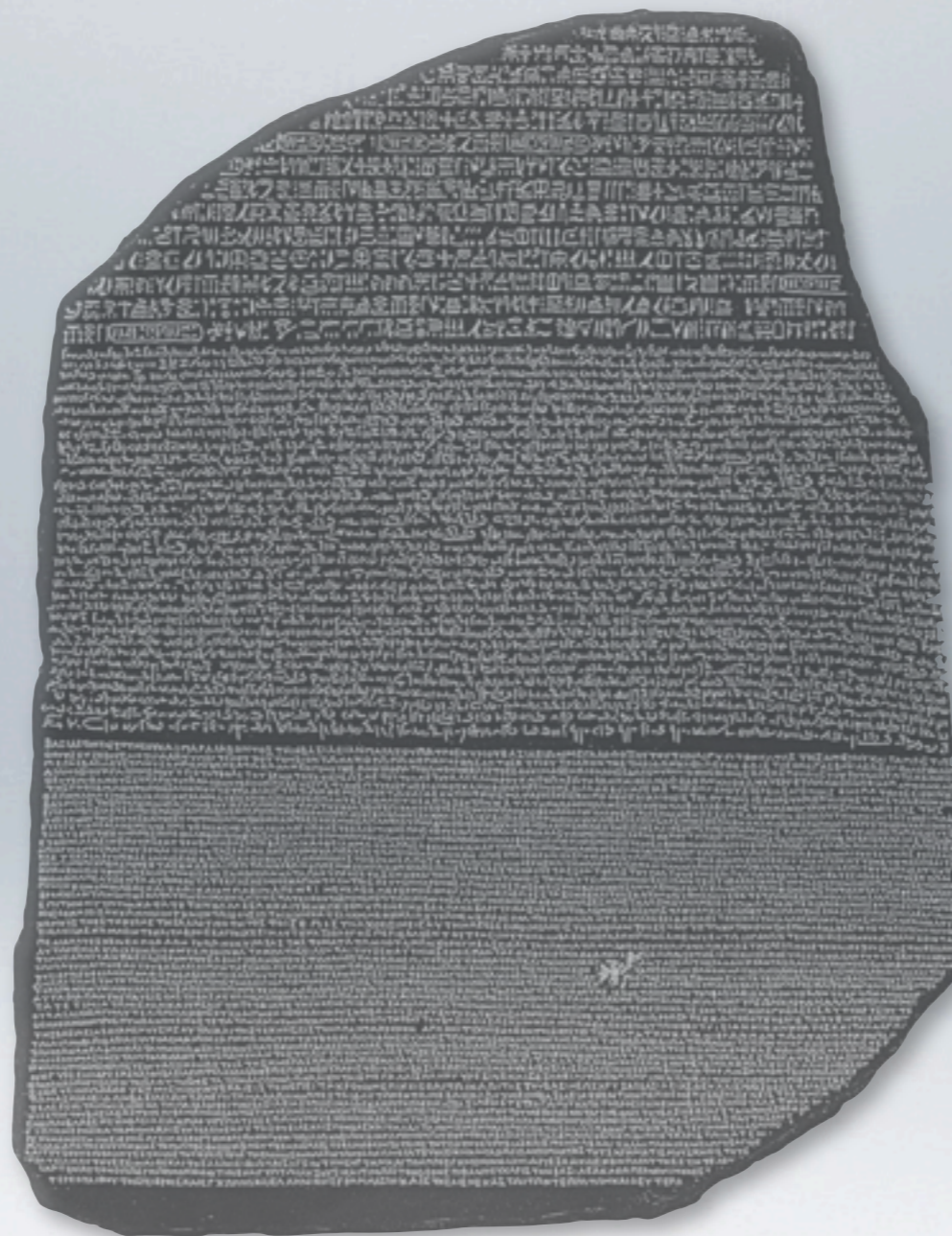


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VALUE, ESPECIALLY IN SCIENCE, IS IN



CONTEXT



LINKING



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SOMEONE UNDERSTOOD IT VERY WELL AND

A man with short, graying hair and a blue button-down shirt is speaking at a podium. He has a surprised or excited expression, with wide eyes and an open mouth. A silver microphone is positioned in front of him. The podium is white and features a circular logo with three colored segments (green, orange, pink) on a blue background. A speech bubble with a gray border and a tail pointing to the man's mouth contains the word "Eureka!" in white, bold, sans-serif font. The background is dark and out of focus, with a bright light source visible in the upper right corner.

Eureka!



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HE INVENTED THE WEB

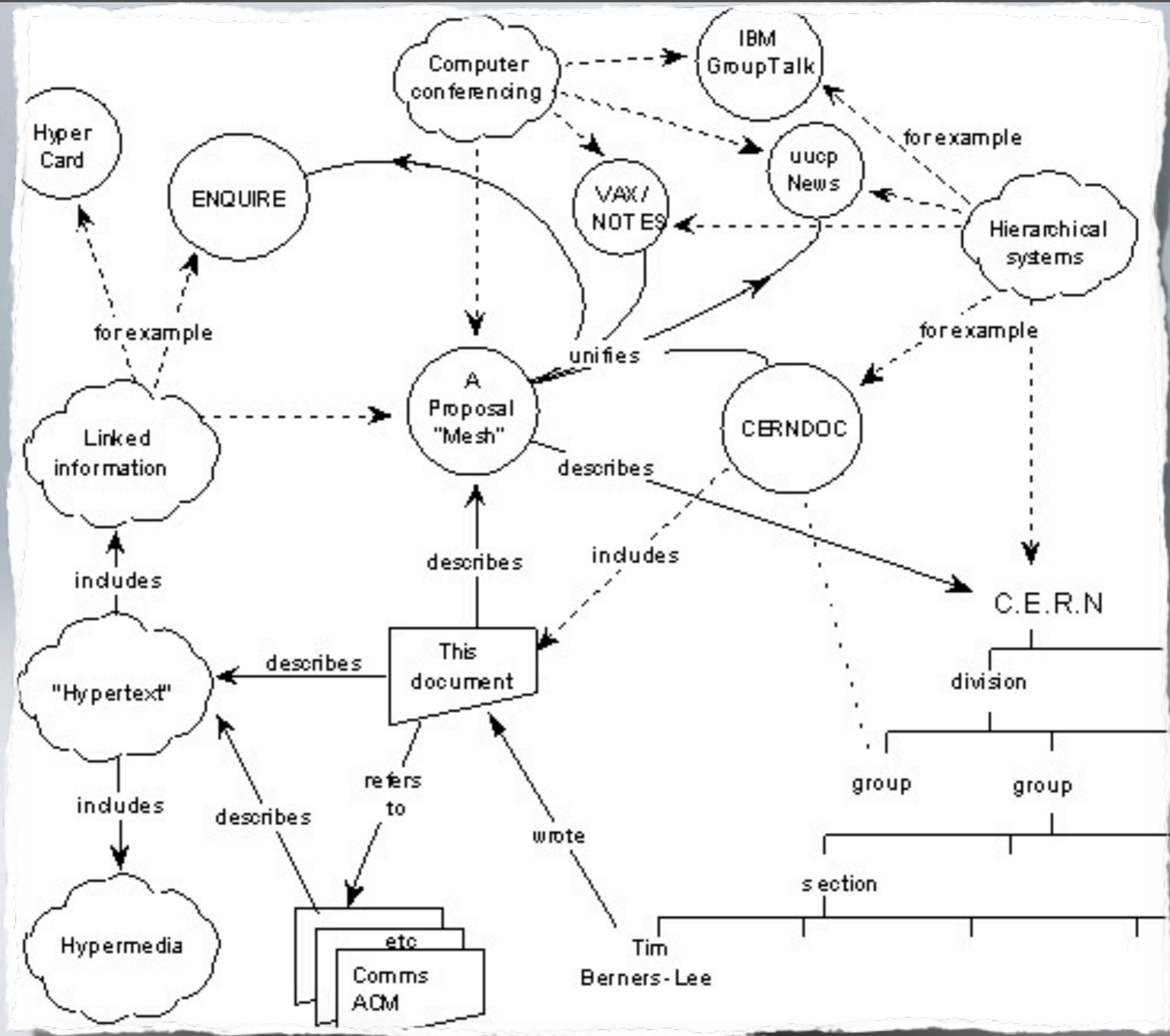


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BUT IT DIDN'T QUITE WORK AS HE IMAGINED





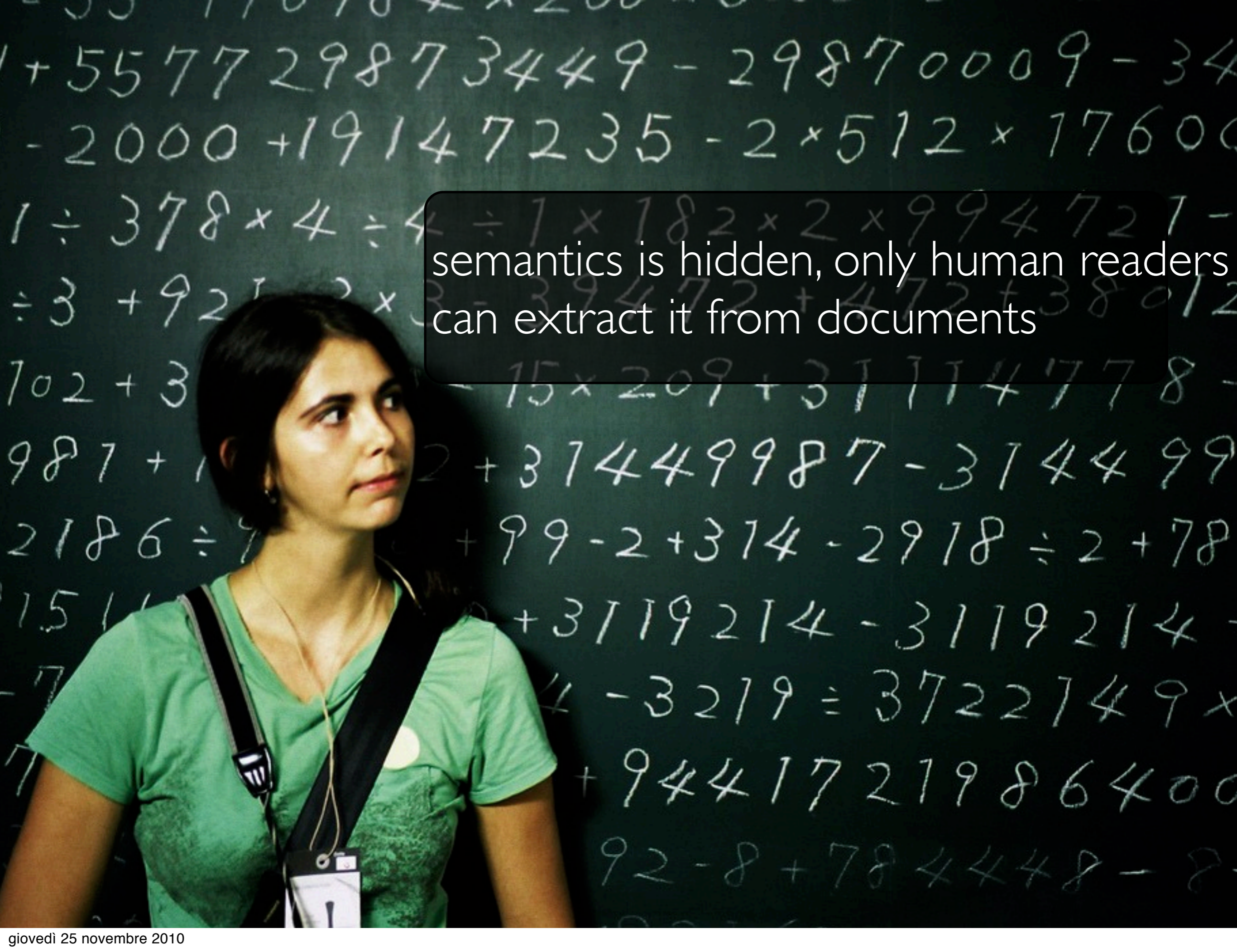
IT BECAME A **WEB OF DOCUMENTS**,
MEANT ONLY FOR HUMAN CONSUMPTION



MACHINES HAD NO WAY OF
UNDERSTANDING



THE CONTEXT;
THAT TWO DOCUMENTS TALK ABOUT THE
SAME **THING**



semantics is hidden, only human readers can extract it from documents



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MACHINES ARE HELPLESS



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UNLESS...



WE TELL THEM IN A VERY SIMPLE WAY (THEY'RE STUPID) WHAT WE ARE TALKING ABOUT



THIS IS WHAT THE SEMANTIC WEB (AND
LINKED DATA AND THE WEB OF DATA) IS
ABOUT



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FORGET ARTIFICIAL INTELLIGENCE!



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JUST THINK OF...



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THE WHOLE WEB AS HUGE, DISTRIBUTED, UNIQUE DATABASE

Web of Documents

Web 1.0

Hidden semantics, no access to data

Social Web

Web 2.0

Hidden semantics, partial access to data, 1-to-1 Interoperability

Web of Data

Web 3.0

Explicit semantics, full access to data, global Interoperability

Different Models of Collaboration

We write, We
publish

Web 1.0

We publish,
you write

Web 2.0

You write, you
publish, we mix

Web 3.0



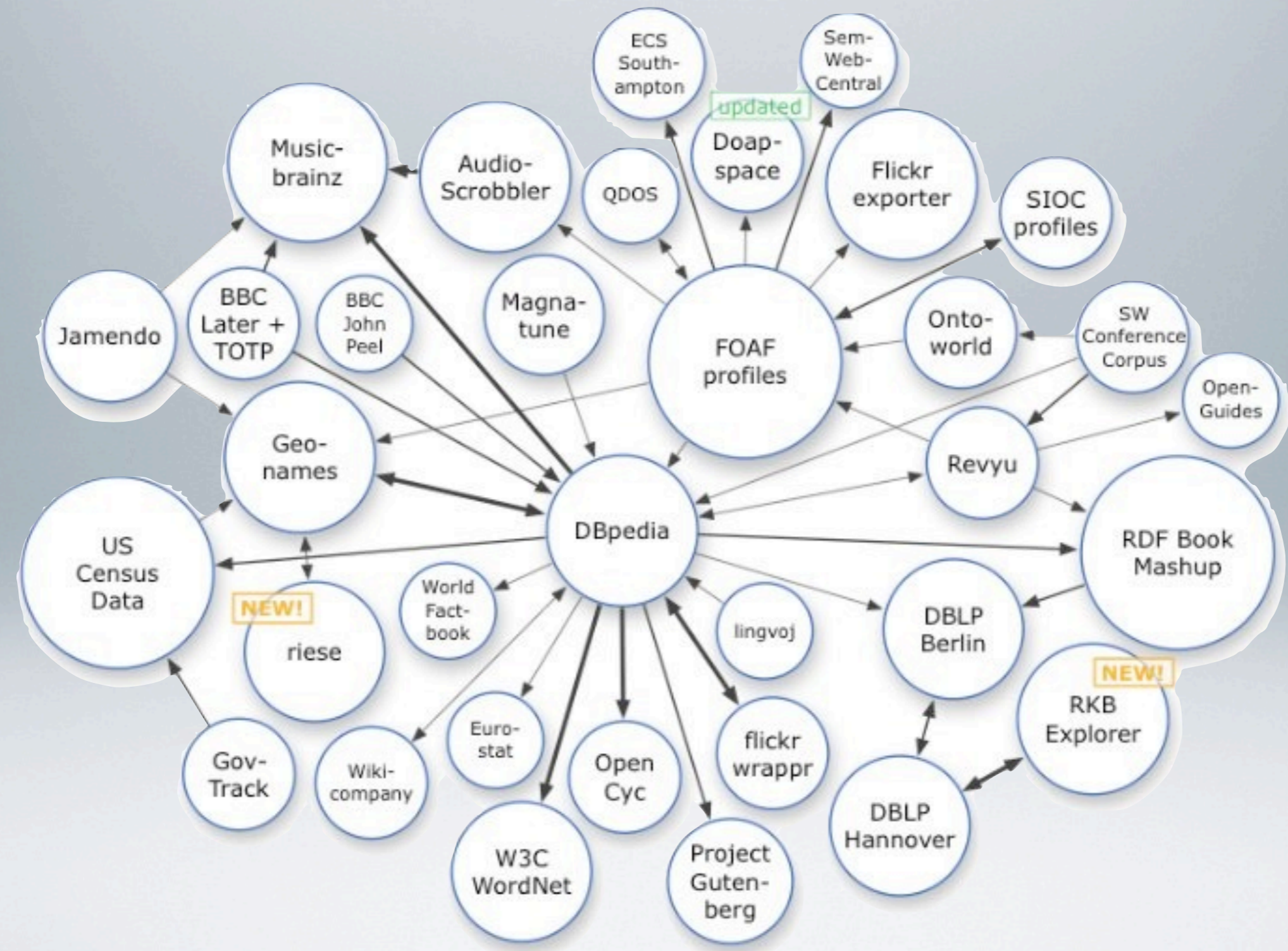
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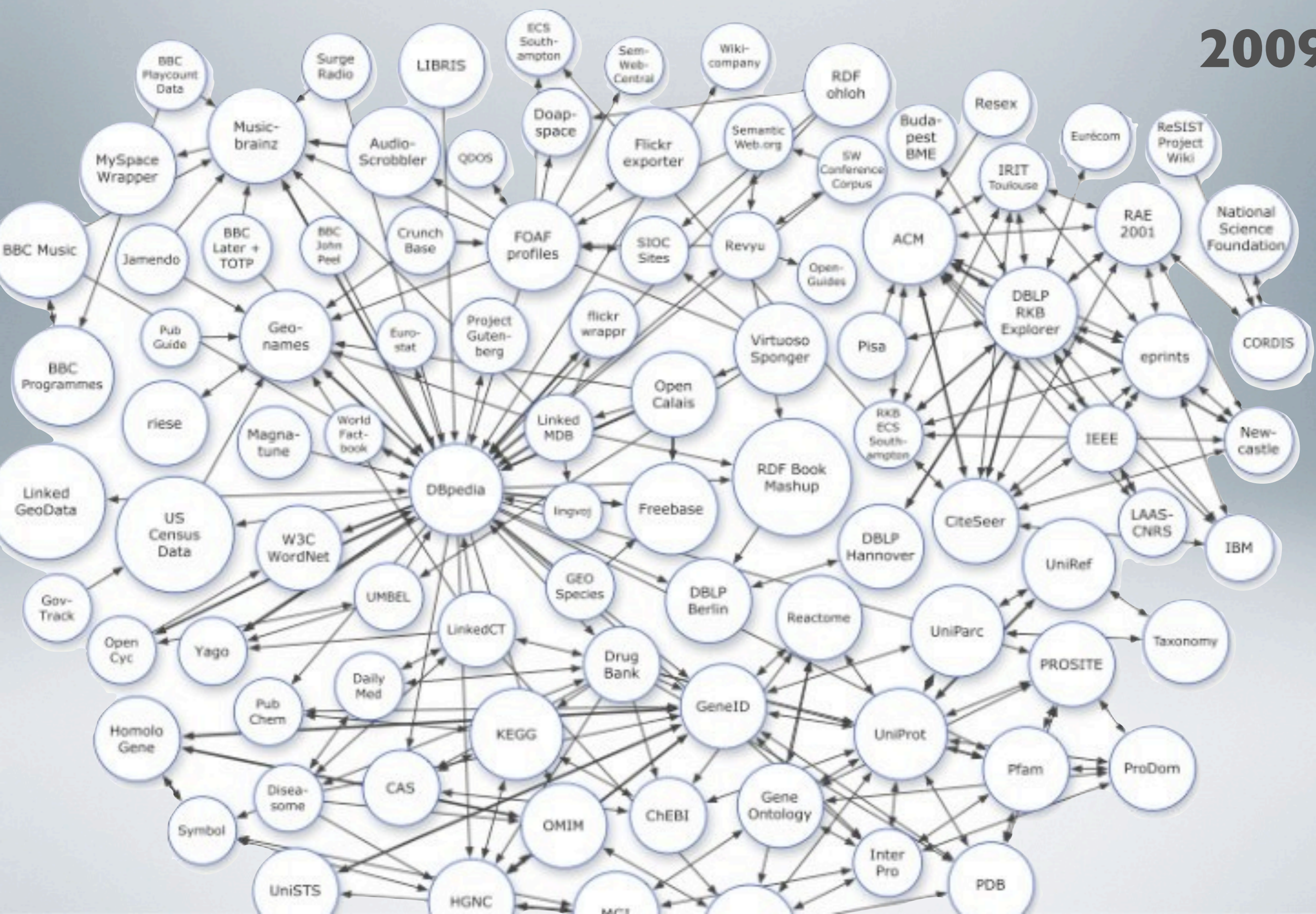
IT'S GROWING FAST

2009





2009





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UK GOV



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US GOV



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US GOV



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NYT



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LIBRARY OF CONGRESS



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GERMAN NATIONAL LIBRARY



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EUROPEANA



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MUNICIPALITIES OF LONDON, TORONTO, ZARAGOZA, SAN FRANCISCO



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GOOGLE



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YAHOO



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FACEBOOK



TODAY WE HAVE MORE THAN 15 BILLION
TRIPLES*

* Atomic “bits of information” in the semantic web.



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WHAT FOR?



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TO LET PEOPLE RE-USE OUR DATA IN NEW
AND **UNANTICIPATED** WAY



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TO DO RESEARCH, DEVELOP APPLICATIONS
AND MASH-UPS, TO PLAY, TO DO BUSINESS...

TO KNOW MORE

www.ted.com



Hans Rosling
the best stats you
have ever seen



Tim Berners Lee
on the Next Web

How to Publish Linked Data on the Web

<http://www4.wiwiss.fu-berlin.de/bizer/pub/LinkedDataTutorial/>



TO DO RESEARCH, DEVELOP APPLICATIONS
AND MASH-UPS, TO PLAY, TO DO BUSINESS...

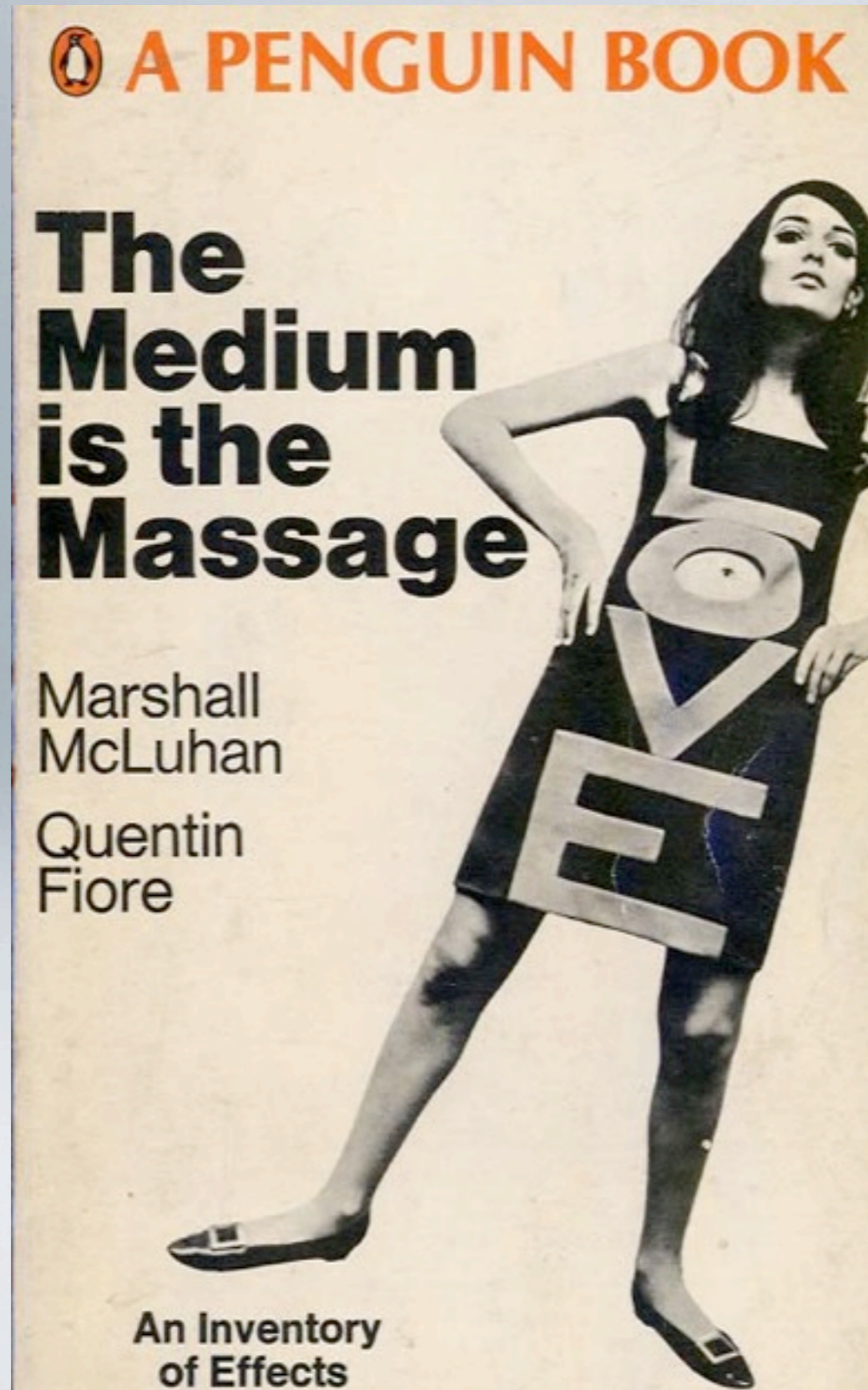


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MURUCA



A WORD OF CAUTION

THREE PILLARS



OPEN SOURCE



SEMANTIC WEB



OPEN ACCESS



A SET OF TOOLS (NOT AN OUT-OF-THE-BOX
PRODUCT) TO BUILD RESEARCH PLATFORMS
AND DIGITAL LIBRARIES IN THE LINKED OPEN
DATA CLOUD

WHAT?



LED BY A COLLABORATION BETWEEN NET7
AND THE UNIVERSITY OF ANCONA WITH
CONTRIBUTIONS OF MANY INSTITUTIONS
WITHIN COST-A32. DERI SOON TO JUMP IN.

WHO?

THERE ARE MANY SMALLER (AND TINY!)
INSTITUTIONS WHO HAVE MASTERPIECES OF
EU CULTURE AND NO MONEY/STAFF/KNOW-
HOW TO PUT THEM ON THE SEMANTIC WEB

WHY?



[HTTP://WWW.MURUCA.ORG/](http://www.muruca.org/)

NOTICE: EXTENSIVE DOCS & TUTORIAL WILL
BE PUBLISHED VERY SOON!

WHERE?



TALIA + **UI WIDGETS** + **SWICKYNOTES**
IIPIMAGE + **FLEXIP**
LOD SEARCH & RECOMMENDER (SOON)

PARTS



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BUILDING A SCHOLARLY PLATFORM OR DL WITH MURUCA



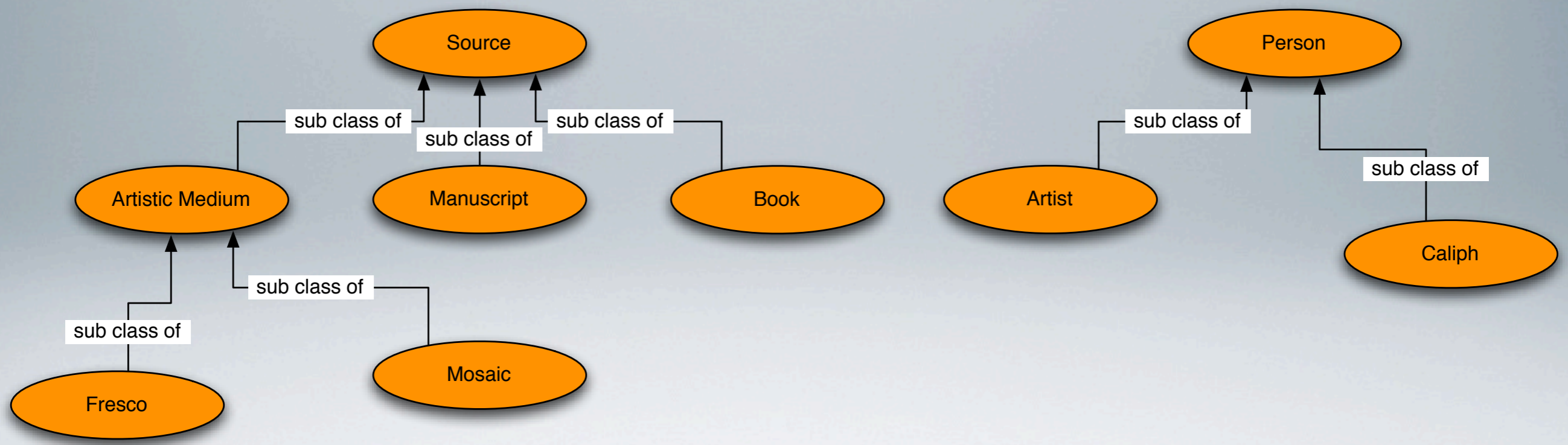
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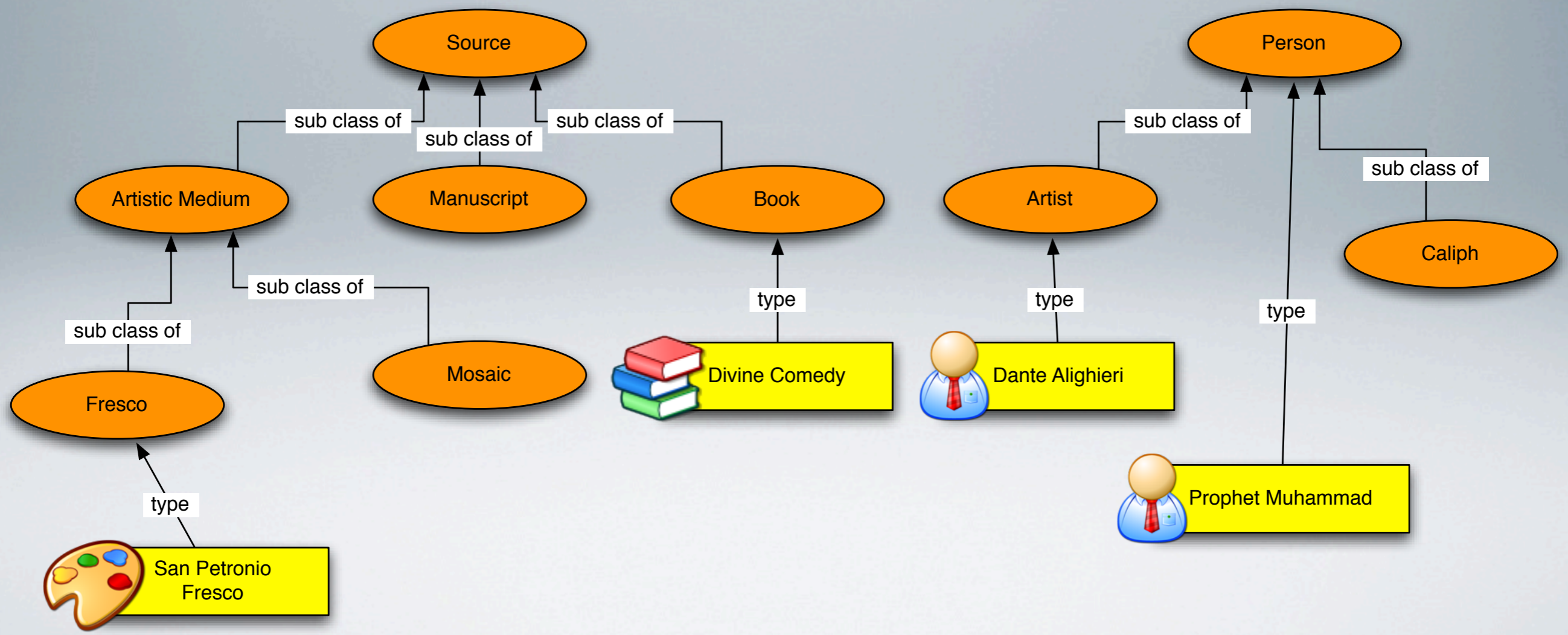


I MODEL YOUR DOMAIN

Ontologies: vocabularies for your domain (extend existing ones when possible)



Ontologies: vocabularies for your domain (extend existing ones when possible)





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2 LOAD DATA & METADATA


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<source>
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    <predicate>type</predicate>
    <value>TaliaSource</value>
  </attribute>
  <attribute>
    <predicate>uri</predicate>
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  </attribute>
  <attribute>
    <predicate>rdfs:label</predicate>
    <value>Transcription of Page 2 of Zād al-ma'ād@en</value>
  </attribute>
  <attribute>
    <predicate>dcns:creator</predicate>
    <value>Michele Barbera</value>
  </attribute>
  <attribute>
    <predicate>dcns:creator</predicate>
    <value>Chriastian Morbidoni</value>
  </attribute>
  <attribute>
    <predicate>rdf:type</predicate>
    <object>demo:Transcription</object>
  </attribute>
  <attribute>
    <predicate>dcns:description</predicate>
    <value>This is a linear transcription of page 2 of Page 2 of Zād al-ma'ād@en</value>
  </attribute>
  <file>Imge34554.tiff</file>
  <file>TextAAA.xml</file>
</source>
```



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3 DEFINE EDITORIAL POLICIES



4 DESIGN UI

(Tabbed & Generic come for free, you can use them as starting points)



5 MAKE IT REALLY INTEROPERABLE

(“Link” to LinkedData, OAI-PMH, SEO, Attach a License)

TIME FOR A DEMO





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SEMANTIC ANNOTATION

FRAGMENTS & ANNOTATIONS: A GLANCE AT THE DATA MODEL

Source (Resource)

Buraq

The source area contains the following elements:

- A yellow sticky note at the top with the text "Note".
- A text block with four lines: "text text text text text text", "text text text text text text", "text text text text text text", and "text text text text text text". The third line has a small orange highlight under "text text".
- A yellow sticky note on the right side of the text block with the text "Note".
- An image at the bottom showing a figure in a landscape with a crescent moon and a semi-circle, with a yellow sticky note on top containing the text "Note".



FRAGMENTS & ANNOTATIONS: A GLANCE AT THE DATA MODEL

Source (Resource)

Buraq

Note


text text text text text text
text text text text text text
text text text **text text**
text text text text te

Note

Note

Author: Bob Smith, **Date:** 10/08/2010

Textual comment: some more information about this fragment of text

Structured Part (Statements) 

Buraq.txt/87874	has variant	Buraq2.txt/78569
Buraq.txt/87874	genetic phen	Addition
Buraq.jpg/2134	is explained by	Buraq.txt/87874

FRAGMENTS & ANNOTATIONS: A GLANCE AT THE DATA MODEL

Source (Resource)

Buraq

Note

text text text text text text
text text text text text text
text text text text text text
text text text text text text

Note



Note


Ontologies

Author: Bob Smith, **Date:** 10/08/2010

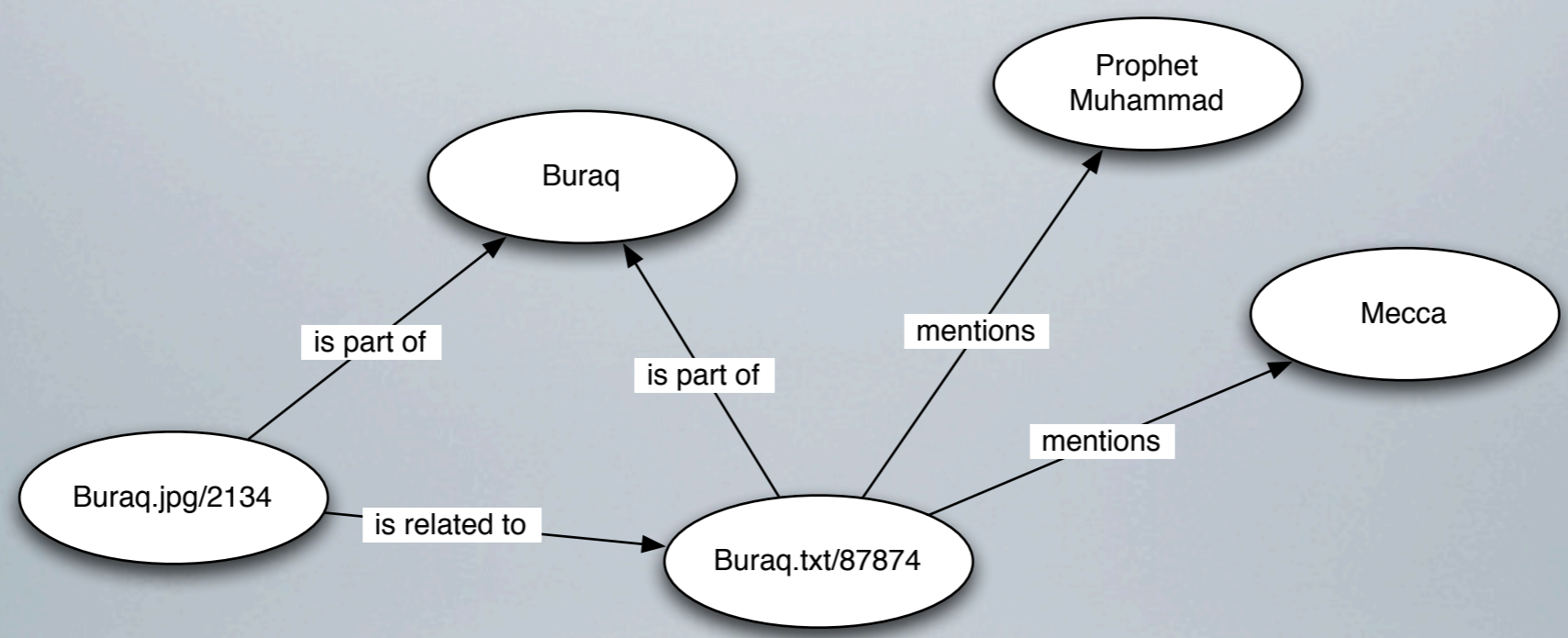
Textual comment: some more information about this fragment of text

Structured Part (Statements)

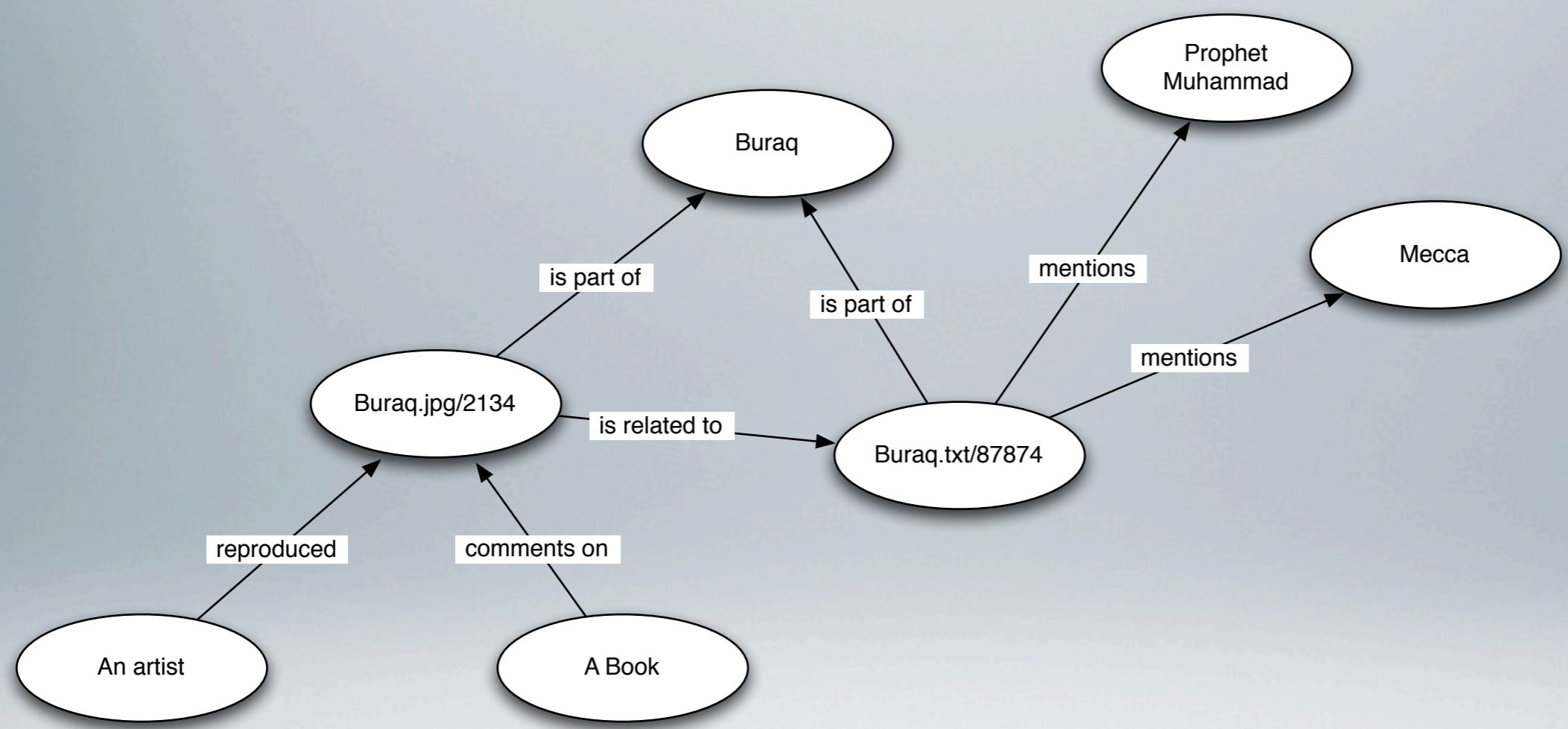
Buraq.txt/87874	has variant	Buraq2.txt/78569
Buraq.txt/87874	genetic phen	Addition
Buraq.jpg/2134	is explained by	Buraq.txt/87874



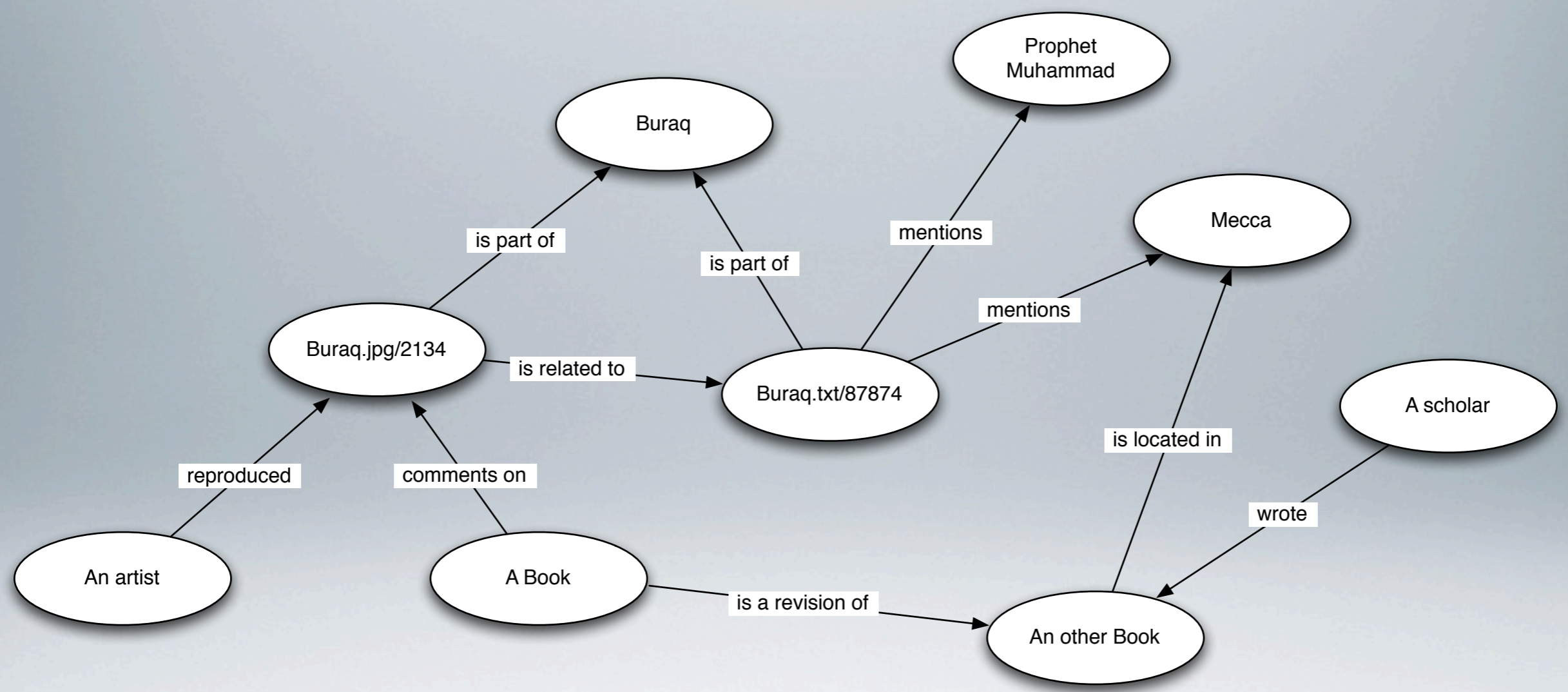
COLLABORATIVE KNOWLEDGE GRAPH



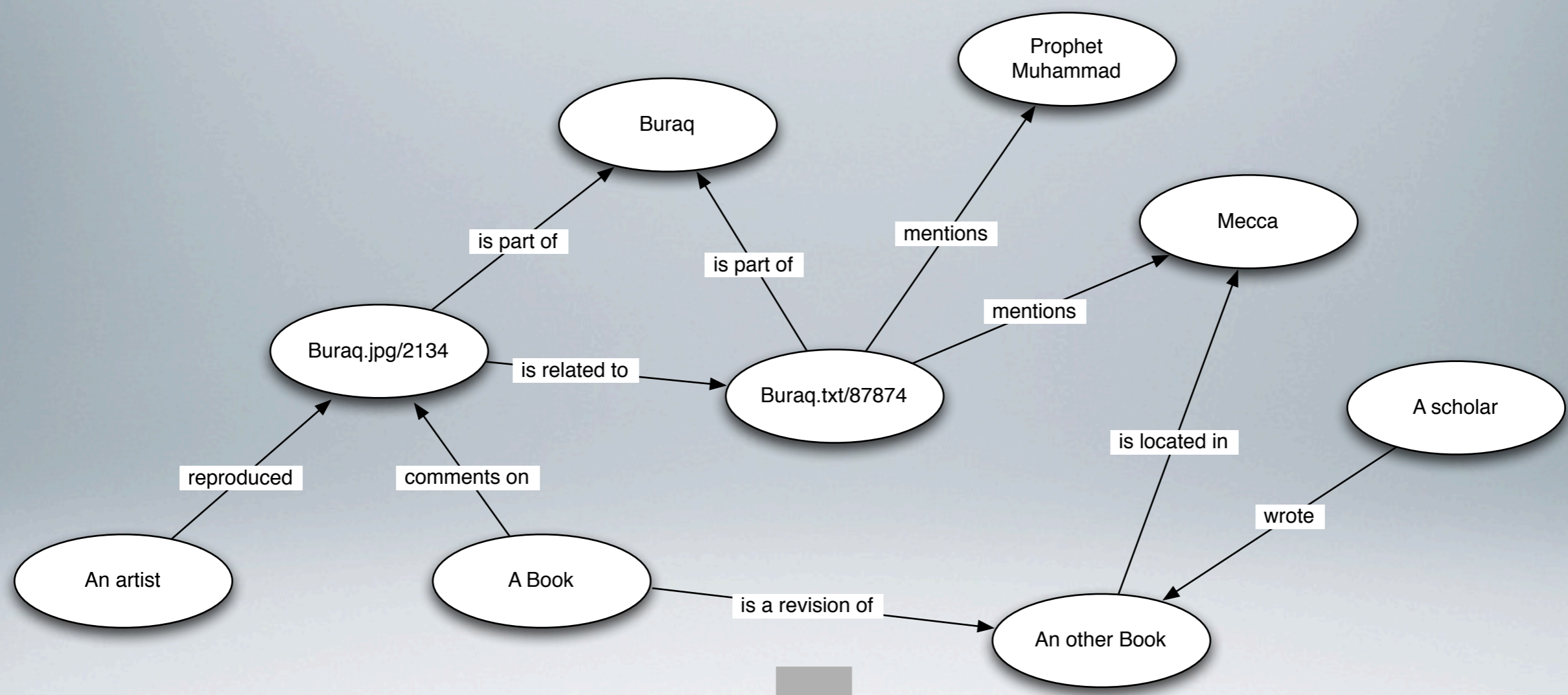
COLLABORATIVE KNOWLEDGE GRAPH



COLLABORATIVE KNOWLEDGE GRAPH



COLLABORATIVE KNOWLEDGE GRAPH



EDITORIAL POLICY (peer review?)

PUBLISH ON THE WEB

COLLABORATION SCENARIO



FROM: Alice Brown <ab@example.com>
SUBJECT: *I think I'll win the nobel prize*

Hi Michele,

I think I've done a couple of exceptional discoveries about islamic art on that manuscript we were working on.

Check, them out, I've published my SwickyNotebook on my blog:
http://islamicart.muruca.org/users/admin/swicky_notebooks/dariah

Ciao,
Alice



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FUTURE



SEMLIB

Semantic Web Tools for Digital Libraries

swickynotes on the web
&
Linked Data Recommender

EU-FP7
2011-2013

Net7, Uni Ancona, Deri Gallway, Knowledgehives, IN2, Liberologico



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iOS / ANDROID



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LAUNCH SaaS PLATFORM



FEDERATION SOFTWARE

(collaboration with the Nines Project @ the
University of Virginia)



HELP

WE WOULD LIKE TO COLLABORATE
MORE STRICTLY WITH

EUROPEANA & DARIAH



2 Ways

TO SUPPORT MURUCA

NET7

hire us or involve us in EU/
National projects

D-I-Y

and give back to the
community



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**THANK YOU FOR
YOUR ATTENTION**
BARBERA@NETSEVEN.IT



CREDITS

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THANKS

Christian Morbidoni, Danilo Giacomi, Riccardo Giomi,
Simone Fonda, Giulio Andreini