

# Ontologies and data

The application and limits of OWL

Aldo Gangemi  
Semantic Technology Lab  
ISTC-CNR, Rome

# Why suq semantics?

The suq is where writing and rationality were born

A metaphor of current knowledge in the age of Internet

The Web of Data ... incredibly cheap information ... the Web as a new mass medium

## Phenomena

**Extracting** linguistic invariances, **collecting** semi-structured and deep web data, **reusing** metadata, open datasets, linguistic resources, ontologies, **searching** and **integrating** it all

## Methods

Reengineering, Linking, (Meta)Modeling, Mapping, Formalizing

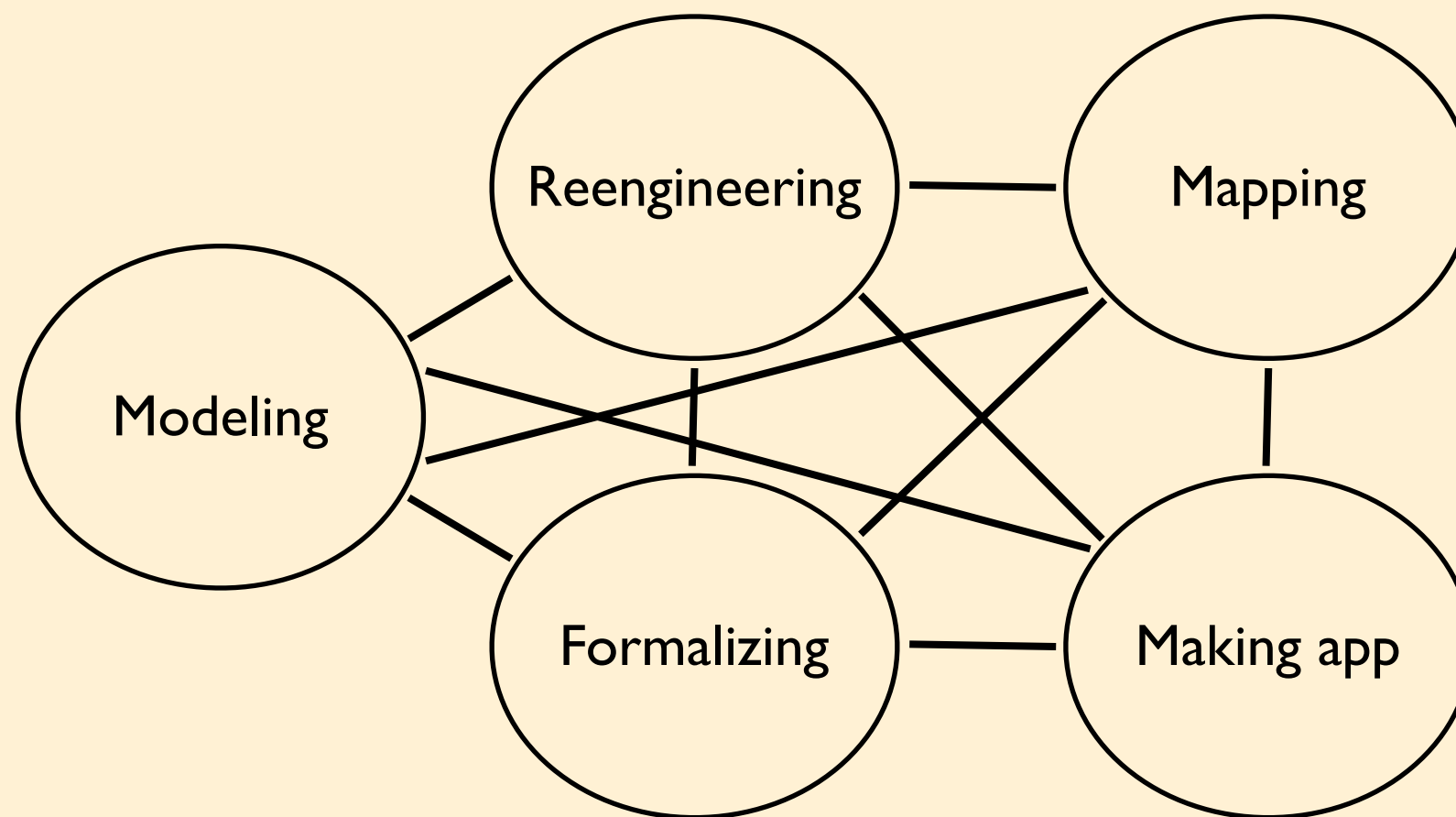
## Visions

Reconciling social/cognitive/lexical with formal semantics

Presenting and exploiting efficiently



# Aspects of dealing with suq semantics



# A lot of data in the web suq

Mash-ups (making apps)

Linked open data (mapping)

Wikipedia, DBpedia, Freebase, etc. (modeling, reengineering, mapping)

Triplify, GRDDL, RDFa, SKOS, SIOC, etc. (reengineering)

Semantic Interoperability (making apps, reengineering, formalizing)



# Annotation on the Web (1)

Web 2.0: Flickr, del.icio.us, etc.

Annotation of Web pages with tags

Semantics depends on intention of annotator



## rewind-button



### Commenti



**Vectormonkey [cancellato] dice:**

Wierd! I mean, cool, but *wierd*...  
Postato 38 mesi fa. ( [link permanente](#) )



**mohawk pro dice:**

thats all i could hope for!  
Postato 37 mesi fa. ( [link permanente](#) )

lips  
foolish  
dance  
art  
love  
girl  
style  
fashion  
alternative  
chaos  
psychosis  
desire  
biscuit  
teacup  
ceramic  
paisley  
models  
bald  
loser  
new  
home  
mohawk  
photo  
s  
limbert  
look  
see  
surprise  
velw  
sean  
d  
photography  
magisch  
艺术  
藝術  
kunst  
τέχνη  
芸術  
예술  
искусство  
arte  
魔术  
魔術

Questa foto appartiene anche a:

— **somnambule (Set)**

Sei alla prima foto.

55 elementi

sfoglia

- + [.:Utterly Surreal:. \(Pool\)](#)
- + [Funny Ha Ha! \(Pool\)](#)
- + [FlickrCentral \(Pool\)](#)
- + [ART DISTRICT \(Pool\)](#)
- + ["Plastic People" or mannequins, dolls and more \(Pool\)](#)
- + [Kitsch Itch \(Pool\)](#)
- + [The Secret Life of Toys \(Pool\)](#)
- + [Art - eye of the beholder / upload 1,](#)

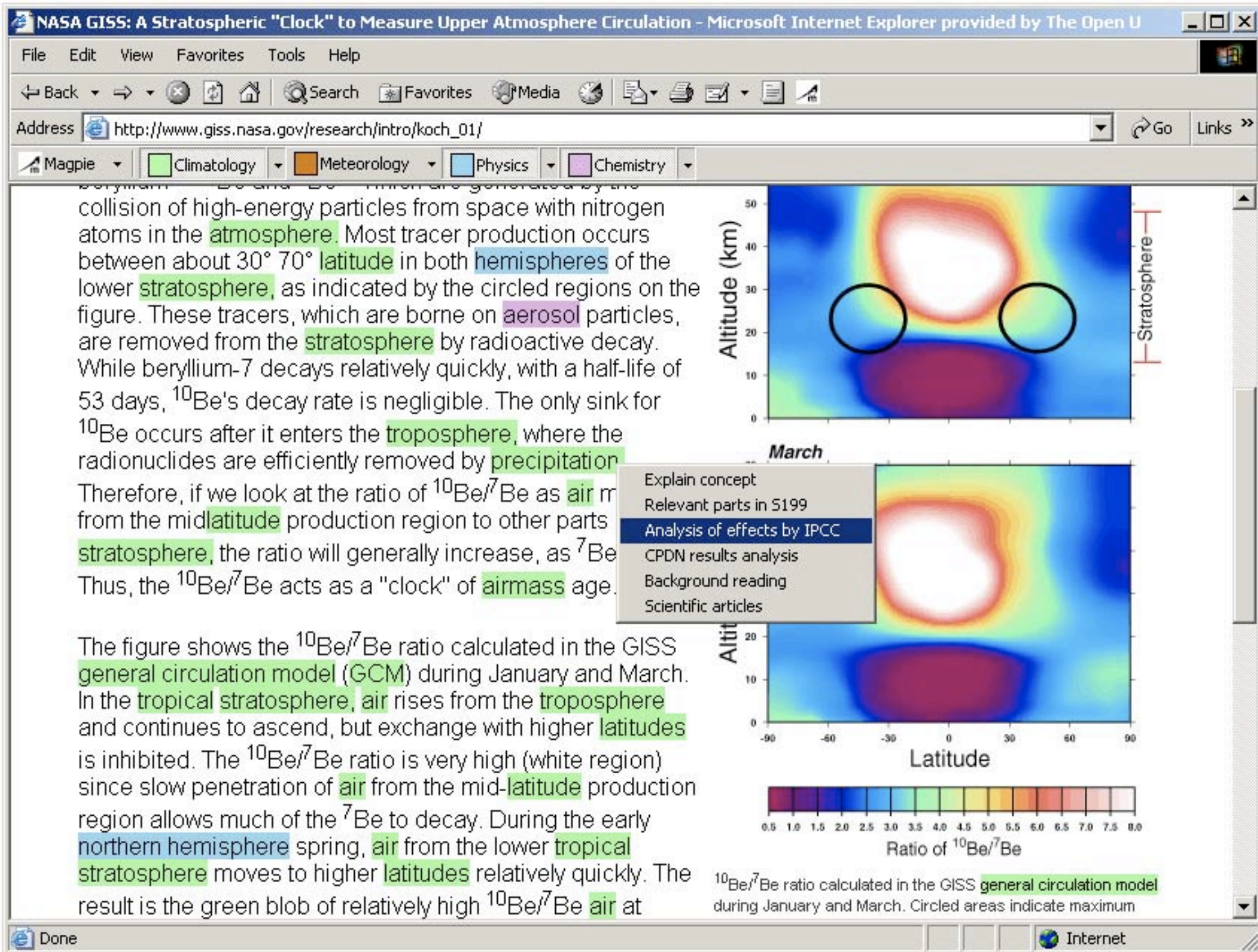
# Annotation on the Web (2)

## Semantic Web

Annotation of Web pages with tags interpreted with reference to a logical language (e.g. OWL-RDF)

Semantics depends on intention of annotator, and on the constraints deriving from the reused ontology





- Explain concept
- Relevant parts in S199
- Analysis of effects by IPCC
- CPDN results analysis
- Background reading
- Scientific articles

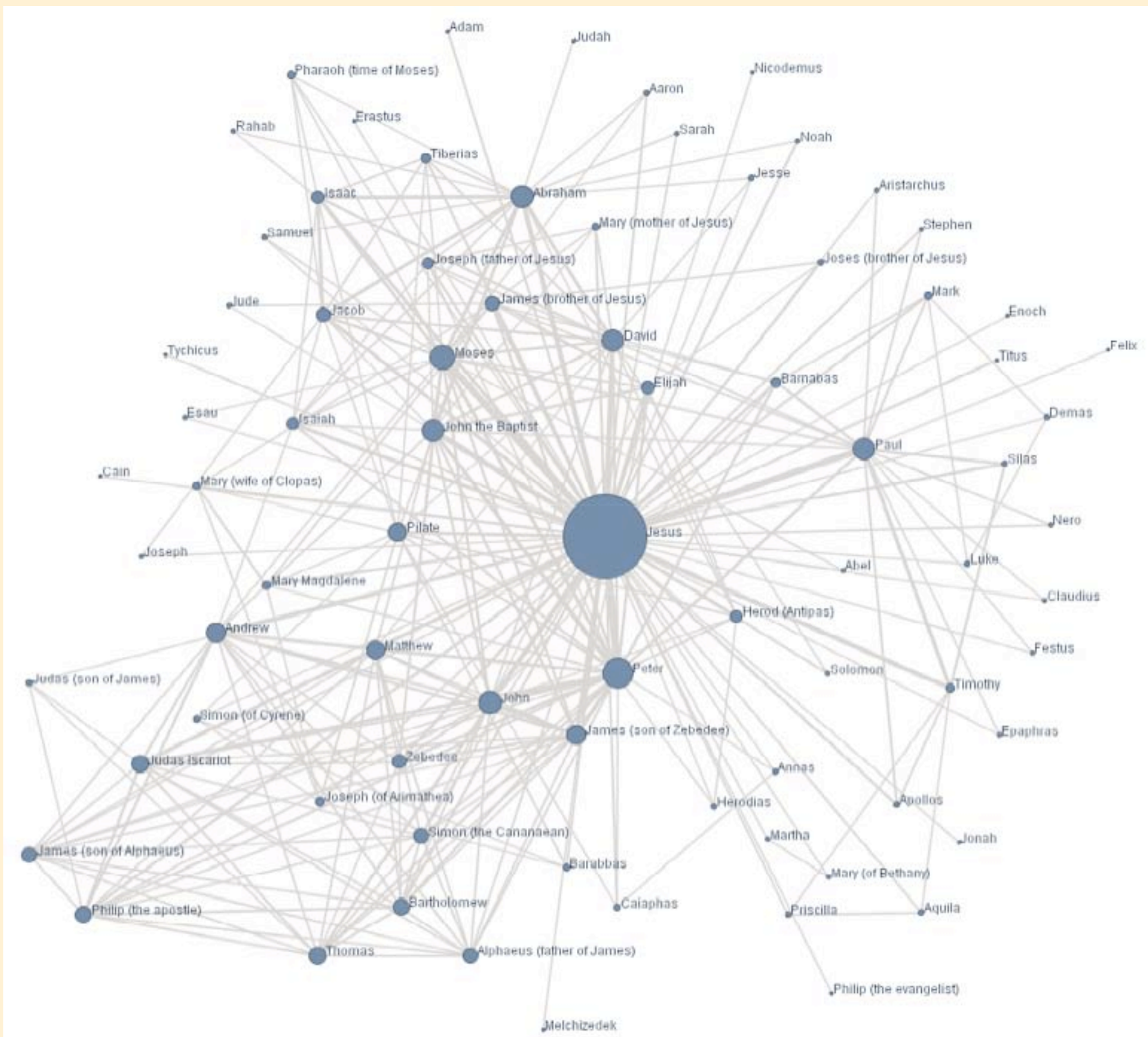
# Social networks

FaceBook, MySpace, Friendster, Orkut, LinkedIn, FOAF, SIOC

Similarity between Web users; various formats

Semantics depends on the model of the application, and on how distance between the nodes is computed





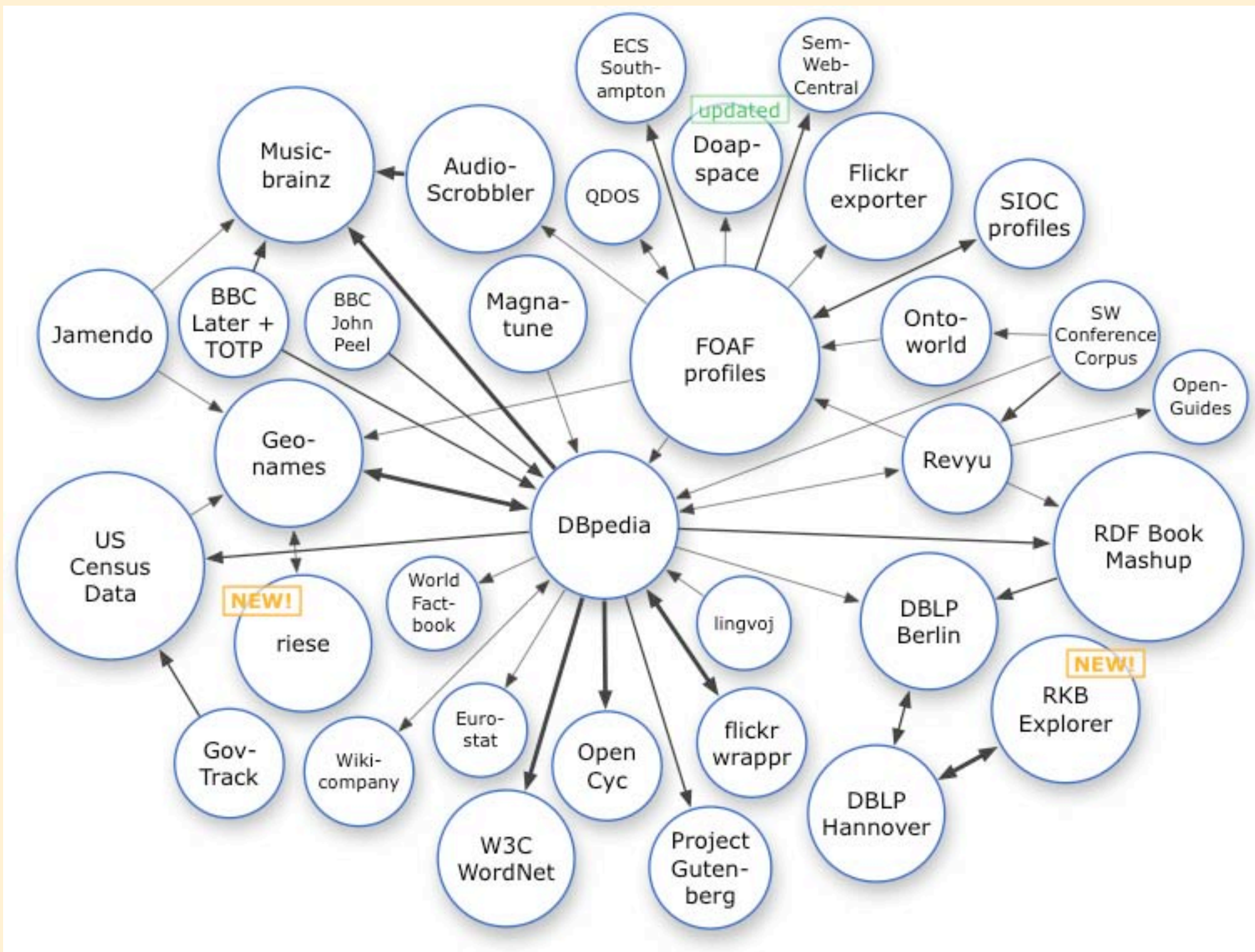
# RDF data (“triples”)

## Linked Data

Dataset extracted from heterogeneous sources, and triplified.  
Associations (linkings) are sometimes added in direct, naïve ways

Semantics depends on intended semiotics of data and relations  
assumed for linking





# Knowledge retrieval

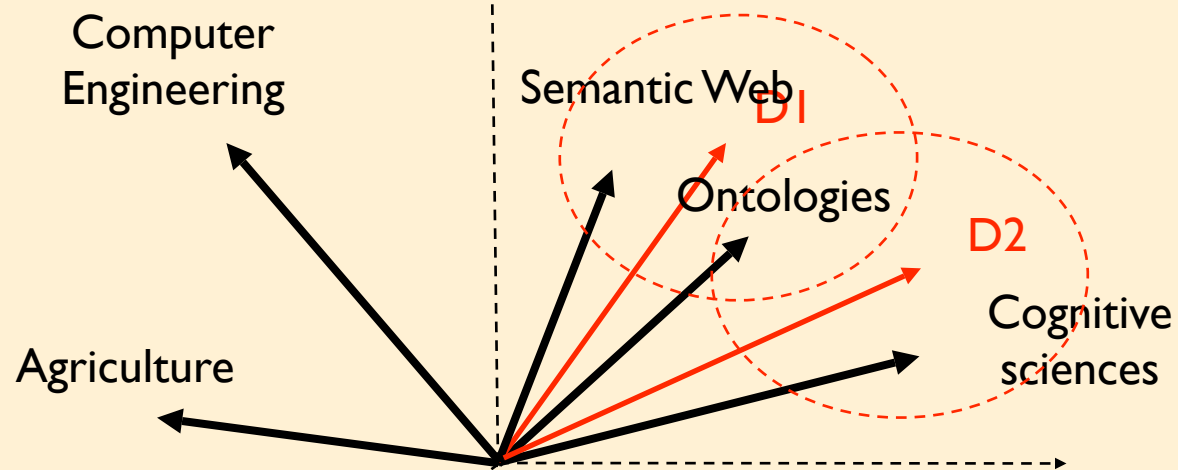
NLP, LSA, IE, etc.

Automatic association of non-structured information

Sources have a linguistic semantics

Depending on intended semiotics for extraction/learning (what features, how related, etc.)





The screenshot shows the TopBraid Java application interface. The main window displays an ontology editor for the file "GANGEMI\_ALDO". The interface includes several panels:

- Classes**: A list of classes under the namespace `cnr:`, including `AreaDisciplinare`, `Argomento`, `Citta`, `Commessa`, `Dipartimento`, `Istituto`, `Modulo`, `Profilo`, `Progetto`, `Ricercatore`, and `StatoDellaCommessa`.
- Navigator**: A tree view showing the project structure, including folders like "HTML", "prove", and ".DS\_Store", and files like "CNR\_str.owl", "CNRKB\_InfQue2.owl", etc.
- Properties**: A list of properties for the selected resource, including `cnr:afferisceA`, `cnr:areaDelLavoratore`, `cnr:dipartimentoDi`, `cnr:dipartimentoDiAfferenzaDi`, `cnr:dipendeDalDipartimento`, `cnr:esegue`, `cnr:eseguitoDa`, `cnr:faRicercaSu`, `cnr:haCompetenzeVicineA`, `cnr:haParolaChiave`, `cnr:haParte`, `cnr:haPossibilmenteCompetenzaSu`, `cnr:haProbabilmenteCompetenzaSu`, `cnr:haProfilo`, `cnr:haResponsabile`, `cnr:haSedeDiSvolgimento`, `cnr:haSimilaritaGenericaCon`, `cnr:haSimilaritaSpecificaCon`, `cnr:haSimilaritaStatisticamenteGenericaCon`, `cnr:haSimilaritaStatisticamenteSignificativaCon`, `cnr:haSimilaritaStatisticamenteSpecificaCon`, `cnr:haSimilaritaStatisticaSuTemiFrequentiCon`, `cnr:haStatoDiAttivita`, `cnr:istitutoConTemiSimilia`, and `cnr:lavoraInAreaDisciplinare`.
- Form**: A tabbed view showing the form for the selected resource, with fields for `rdf:type`, `rdf:label`, and `rdf:comment`.
- Instances**: A table showing instances of the selected class, with columns for `Resource`, `rdf:type`, `rdf:label`, and `rdf:comment`.

Resource	rdf:type	rdf:label	rdf:comment
GANGEMI_ALDO	cnr:Ricercatore	GANGEMI ALDO	
GARCIA_LORENZANA_JOSE_GUILL	cnr:Ricercatore	GARCIA LORENZANA JOSE GUILLERMO	
GARGANO_SILVANA	cnr:Ricercatore	GARGANO SILVANA	
GASPARINI_GIAN_PIETRO	cnr:Ricercatore	GASPARINI GIAN PIETRO	
GATTI_MAUROZIO	cnr:Ricercatore	GATTI MAURIZIO	
GELFI_CECILIA	cnr:Ricercatore	GELFI CECILIA	
GERACI_DOMENICO	cnr:Ricercatore	GERACI DOMENICO	
GERMAK_ALESSANDRO_FRANCO	cnr:Ricercatore	GERMAK ALESSANDRO FRANCO	
GERMANO__ALBERTO	cnr:Ricercatore	GERMANO' ALBERTO	

# Data and behavior

Virtual worlds: where are the data?

Semantics of dynamic systems: Second Life, Wii, ...?

Separation of data and presentation

Also behavioral data

Also dynamics of non-behavioral data

# Dealing with suq semantics: current state

Much enthusiasm, a lot of nice ideas

Much confusion and mutual misunderstanding between “*suqs*” and “*neats*”

Pushing formal semantics beyond its limits (e.g. the “owl:sameAs” dispute)

Doing ad-hoc apps like in mash-ups

Mixing up strings, classes, terms, concepts, topics, tags, etc.

Suppose we need to design a desire ontology: where to start from?



# Ontology-related data

## Informal vs. formal

Text corpora

Folksonomies (tag sets, directories, topic trees, subject indexes, infoboxes)

Lexica (dictionaries, wordnets, terminologies, nomenclatures)

Knowledge organization systems (thesauri, classification schemes)

Frames, semantic networks

DB schemas

Linked Open Data datasets

(Computational) ontologies

# Text ...

Plena mujer, manzana carnal, luna caliente,  
espeso aroma de algas, lodo y luz machacados,  
qué oscura claridad se abre entre tus columnas?  
Qué antigua noche el hombre toca con sus sentidos?  
Ay, amar es un viaje con agua y con estrellas,  
con aire ahogado y brucas tempestades de harina:  
amar es un combate de relámpagos  
y dos cuerpos por una sola miel derrotados.  
Beso a beso recorro tu pequeño infinito,  
tus márgenes, tus ríos, tus pueblos diminutos,  
y el fuego genital transformado en delicia  
corre por los delgados caminos de la sangre  
hasta precipitarse como un clavel nocturno,  
hasta ser y no ser sino un rayo en la sombra.

[Pablo Neruda, Cien sonetos de amor]



Advanced Search

http://plato.stanford.edu/search/searcher.py?query=desire

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Advanced Search

**STANFORD ENCYCLOPEDIA OF PHILOSOPHY**

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**Results for desire** **1-10 of 459 entries found**

**Spinoza's Psychological Theory**  
 In Part III of his Ethics, "On the Origin and Nature of the Affects," Spinoza addresses two of the most serious challenges facing his thoroughgoing naturalism. First, he attempts to show that human beings ... **desire**, and Hobbes in his physiology uses the term to refer to the physical causes of human **desire** (Leviathan VI). So 'conatus' has both broad, physical and specifically human, psychological ...  
 Michael LeBuffe  
<http://plato.stanford.edu/entries/spinoza-psychological/>

**Plotinus**  
 Plotinus (204/5 – 270 C.E.), is generally regarded as the founder of Neoplatonism. He is one of the most influential philosophers in antiquity after Plato and Aristotle. The term 'Neoplatonism' ... **desire**. But in the highest life, the life of Intellect, where we find the highest form of **desire**, that **desire** is eternally satisfied by contemplation of the One through the entire array of Forms that ...  
 Lloyd Gerson  
<http://plato.stanford.edu/entries/plotinus/>


**Moral Motivation**  
 In our everyday lives, we confront a host of moral issues. Once we have deliberated and formed judgments about what is right or wrong, good or bad, these judgments tend to have a marked hold on us. ... **desire** or disposition of the individual herself. Second, moral properties not only motivate entirely on their own: they provide overriding motivation. Of course, their motivational power depends on an ...  
 Connie S. Rosati  
<http://plato.stanford.edu/entries/moral-motivation/>

**Well-Being**  
 Well-being is most commonly used in philosophy to describe what is non-instrumentally or ultimately good for a person. The question of what well-being consists in is of independent interest, but it ... **desire** theories, or objective list theories. According to the view known as welfarism, well-being is the only value. Also important in ethics is the question of how a

Encyclopedia ...



# Wikipedia ...



WIKIPEDIA  
The Free Encyclopedia

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## Desire

From Wikipedia, the free encyclopedia

**Desire** is a strong wish or craving.

**Desire** may also refer to:

### Concepts

- Desire (in Philosophy)
- Desire (psychoanalysis)
- Interpersonal attraction
- Lust**, intense craving for self gratification
- Libido, sexual desire
- Greed**, selfish pursuit of wealth, power, or possessions
- Want, in economics
- Preference**, on which microeconomic theory is based
- Motivation**, thought that leads to an action
- Tanha** in Buddhist psychology, as described in the *Four Noble Truths*
- A concept in **Lacanian psychoanalytic theory** related to the Oedipus complex

### Music

- Desire* (album), by Bob Dylan (1976)
- Desire* (Tuxedomoon album), an album by Tuxedomoon (1981)
- Desire* (Tom Scott album), (1982)
- Desire* (Pharoahe Monch album), (2007)
- "Desire" (Andy Gibb song), (1980)
- "Desire" (U2 song), (1988)
- "Desire" (Eurovision song), a song by Claudette Pace (2000)
- "Desire" (Do As Infinity song), (2001)
- "Desire" (Ryan Adams song), (2002)
- "Desire" (Geri Halliwell song), (2005)

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Look up ***desire*** in Wiktionary, the free dictionary.

[\[edit\]](#)

**Contents** [\[hide\]](#)

- Concepts
- Music
- Film and television
- Fiction
- Other uses

[\[edit\]](#)

# Linguistic dictionaries and thesauri

## *Oxford American Dictionary*

**desire** |də'zī(ə)r| |də,zaɪ(ə)r| |di,zaɪ(ə)r| |dɪ,zʌɪə|

noun

a strong feeling of wanting to have something or wishing for something to happen : [with infinitive ] *a desire to work in the dirt with your bare hands.*

- strong sexual feeling or appetite : *they were clinging together in fierce mutual desire.*

verb [ trans. ]

strongly wish for or want (something) : *he never achieved the status he so desired* | [as adj. ] ( **desired** ) *it failed to create the desired effect.*

- want (someone) sexually : *there had been a time, years ago, when he had desired her.*
- archaic express a wish to (someone); request or entreat.

ORIGIN Middle English : from Old French **desir** (noun), **desirer** (verb), from Latin **desiderare** (see **desiderate** ).

## *Thesaurus*

**desire**

noun

**1** *a desire to see the world* wish, want, aspiration, fancy, inclination, impulse; yearning, longing, craving, hankering, hunger; eagerness, enthusiasm, determination; informal yen, itch, jones.

**2** *his eyes glittered with desire* lust, sexual attraction, passion, sensuality, sexuality; lasciviousness, lechery, salaciousness, libidinousness; informal the hots, raunchiness, horniness.

verb

**1** *they desired peace* want, wish for, long for, yearn for, crave, hanker after, be desperate for, be bent on, covet, aspire to; fancy; informal have a yen for, have a jones for, yen for, hanker after/for.

**2** *she desired him* be attracted to, lust after, burn for, be infatuated by; informal fancy, have the hots for, have a crush on, be mad about, be crazy about.

# WordNets ...

WordNetX

Lookup:

Senses	Relations
noun: An inclination to want things; "a man of many desires"	▼ Synonyms desire want
noun: The feeling that accompanies an unsatisfied state	▼ Derivationally Related needer wish desire desire desire
noun: Something that is desired	▼ Frames Somebody ----s something Somebody ----s that CLAUSE Somebody ----s to INFINITIVE Somebody ----s somebody to INFINITIVE
verb: Feel or have a desire for; want strongly; "I want to go home now"; "I want my own room"	▼ Hyponyms crave fancy miss hope wish wish wish itch like ambition feel like envy lust after hanker seek
verb: Express a desire for	
verb: Expect and wish; "I trust you will behave better from now on"; "I hope she understands that she cannot expect a raise"	



# FrameNets ...

## Frame Report (recent data)

[| Top of Frame Index](#) | [Top of Lexical Unit Index](#) |

## Desiring

### Definition:

An **Experiencer** desires that an **Event** occur. (Note that commonly a resultant state of the **Event** will stand in for the **Event**.) In some cases, the **Experiencer** is an active participant in the **Event**, and in such cases the **Event** itself is often not mentioned, but rather some **Focal participant** which is subordinately involved in the **Event**.

Generally, the use of a word in this frame implies that the specific **Event** has not yet happened, but that the **Experiencer** believes that they would be happier if it did. Sometimes the **Time of Event**, **Purpose of Event**, or the **Location of Event** are mentioned without the explicit mention of the **Event**.

I only **WANTED** one piece of candy.

The company **was** **EAGER** for him to leave as soon as possible.

Susan **really** **WISHES** that you 'd listen to her.

### FEs:

### Core:

**Event [Evt]**  
**Semantic Type**  
State\_of\_affairs

The change that the **Experiencer** would like to see.

**Experiencer [Exp]**  
**Semantic Type** Sentient

The **Experiencer** is the person (or sentient being) who wishes for the **Event** to occur.

**Focal participant [Foc]**

This is the entity that the **Experiencer** wishes to be affected by some **Event**.

**Location of Event [PEv]**

The **Location of Event** is the place involved in the desired **Event**.  
I **WANT** that box **on top of the other one**.

The prince **WISHES** you **here** before matins.

# Thesauri ...



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

*helping to build a world without hunger*

Agricultural Information Management Standards

■ Interoperability, Reusability, and Cooperation ■

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## AGROVOC Thesaurus

Last Update: 13/02/2007

AGROVOC is a multilingual, structured and controlled vocabulary designed to cover the terminology of all subject fields in agriculture, forestry, fisheries, food and related domains (e.g. environment).

Learn more about AGROVOC by browsing: [AGROVOC Flyer](#)

Search term:

Search in AGROVOC

☒ starting with ☐ containing text ☐ exact match

EN : [Famine](#)

BT : [Disasters](#)

FR : [Famine](#)

RT : [Malnutrition](#)

ES : [Escasez de alimentos](#)

RT : [Nutritional status](#)

AR : [مجاعة](#)

RT : [Economic situation](#)

ZH : [饥荒](#)

RT : [Food stocks](#)

PT : [Escassez de alimentos](#)

RT : [Agricultural situation](#)

CS : [hladomor](#)

RT : [Emergency relief](#)

JA : [飢饉](#)

RT : [Food supply](#)

TH : [ความอดอยาก](#)

SNX : [Hunger \(physiology\)](#)

SK : [hladomor](#)

UF : [Hunger \(socioeconomic problem\)](#)

DE : [HUNGERSNOT](#)

HU : [éhínség](#)

Term code: 2790

[Legend for relationships](#)

Do you want to know more about AGROVOC? [See some illustrations.](#)

# Standard languages help

Transform all in RDF, or even OWL

Cf. Triplify initiative

Then search for RDF or make integrating apps



Search

http://www.sindice.org/search?q=desire&qt=tern

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Search for term "desire..."



desire

Search results for term "desire", found about 3.71 thousand

- [Prison of Desire](#) (RDF)  
 + 2008-06-16 - 108 triples in 18.4 kb  
[http://dbpedia.org/resource/Prison\\_of\\_Desire](http://dbpedia.org/resource/Prison_of_Desire) (Search) (Cached)
- [Desire Quotes](#) (MICROFORMAT)  
 + 2008-06-18 - 3 triples in 352 bytes  
<http://quotationsbook.com/subject/desire/> (Search) (Cached)
- [Goddess of Desire](#) (RDF)  
 + 2008-06-11 - 104 triples in 18.1 kb  
[http://dbpedia.org/resource/Goddess\\_of\\_Desire](http://dbpedia.org/resource/Goddess_of_Desire) (Search) (Cached)
- [Hearts Desire](#) (RDF)  
 + 2008-07-06 - 10 triples in 1.2 kb  
<http://sws.geonames.org/5973180/> (Search) (Cached)
- [Port Desire](#) (RDF)  
 + 2008-07-07 - 10 triples in 1.2 kb  
<http://sws.geonames.org/6111725/> (Search) (Cached)
- [Un tranvía llamado Deseo, A Streetcar Named Desire](#) (RDF)  
 + 2008-06-09 - 93 triples in 17.5 kb  
[http://dbpedia.org/resource/A\\_Streetcar\\_Named\\_Desire](http://dbpedia.org/resource/A_Streetcar_Named_Desire) (Search) (Cached)
- [Maple Heights-Lake Desire](#) (RDF)  
 + 2008-06-12 - 184 triples in 35.2 kb  
[http://dbpedia.org/resource/Maple\\_Heights-Lake\\_Desire%2C\\_Washington](http://dbpedia.org/resource/Maple_Heights-Lake_Desire%2C_Washington) (Search) (Cached)
- [T e N o ... discover your desire](#) (MICROFORMAT)  
 + 2008-06-11 - 11 triples in 1.2 kb  
<http://www.teno.de/teno/deutsch/blog/> (Search) (Cached)
- [Fluid Imagination » Think D...](#) (MICROFORMAT)  
 + 2008-06-11 - 7 triples in 824 bytes  
<http://fluidimagination.com/blog/2005/04/22/think-desire/> (Search) (Cached)
- [The Powerful Emotion of DESIRE](#) (MICROFORMAT)  
 + 2008-06-17 - 11 triples in 1.6 kb  
<http://hypnosismarketingtips.com/direct-marketing-strategies/the-powerful-emotion-of-de>

Watson Semantic Web Search

http://watson.kmi.open.ac.uk/WatsonWUI/

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desire

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- <http://vocab.org/relationship/rel-vocab-20040308.rdf> +  
 o <http://purl.org/vocab/relationship/wouldLikeToKnow> +
- <http://www.nuin.org/ontology/ks> +  
 o <http://www.nuin.org/ontology/ks#Desire> +  
 o <http://www.nuin.org/ontology/ks#Goal> +  
 o <http://www.nuin.org/ontology/ks#hasActor> +
- <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#MrBDI> +  
 o <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#NonAchievableDesire> +  
 o <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#NonConflictingDesire> +  
 o <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#Goal> +  
 o <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#Desire> +
- <http://pervasive.semanticweb.org/ont/2004/06/bdi> +  
 o <http://pervasive.semanticweb.org/ont/2004/06/bdi#Desire> +  
 o <http://pervasive.semanticweb.org/ont/2004/06/bdi> +
- <http://pervasive.semanticweb.org/ont/dev/bdi> +  
 o <http://pervasive.semanticweb.org/ont/dev/bdi#Desire> +  
 o <http://pervasive.semanticweb.org/ont/dev/bdi> +
- <http://city-sleep.livejournal.com/data/foaf> +  
 o <http://www.livejournal.com/interests.bml?int=fake+desire> +  
 o <http://www.livejournal.com/interests.bml?int=real+desire> +
- [http://users.livejournal.com/hot\\_pursuit/data/foaf](http://users.livejournal.com/hot_pursuit/data/foaf) +  
 o <http://www.livejournal.com/interests.bml?int=desire> +
- <http://withinamoment.livejournal.com/data/foaf> +  
 o <http://www.livejournal.com/interests.bml?int=desire> +
- <http://vocab.org/relationship/rel-term-wouldLikeToKnow-20040308.rdf> +  
 o <http://purl.org/vocab/relationship/wouldLikeToKnow> +
- <http://mogatu.umbc.edu/ont/2004/01/Agent.owl#MrAgent> +  
 o <http://mogatu.umbc.edu/ont/2004/01/BDI.owl#Desire> +



# Integrated knowledge search

YAGO-query:

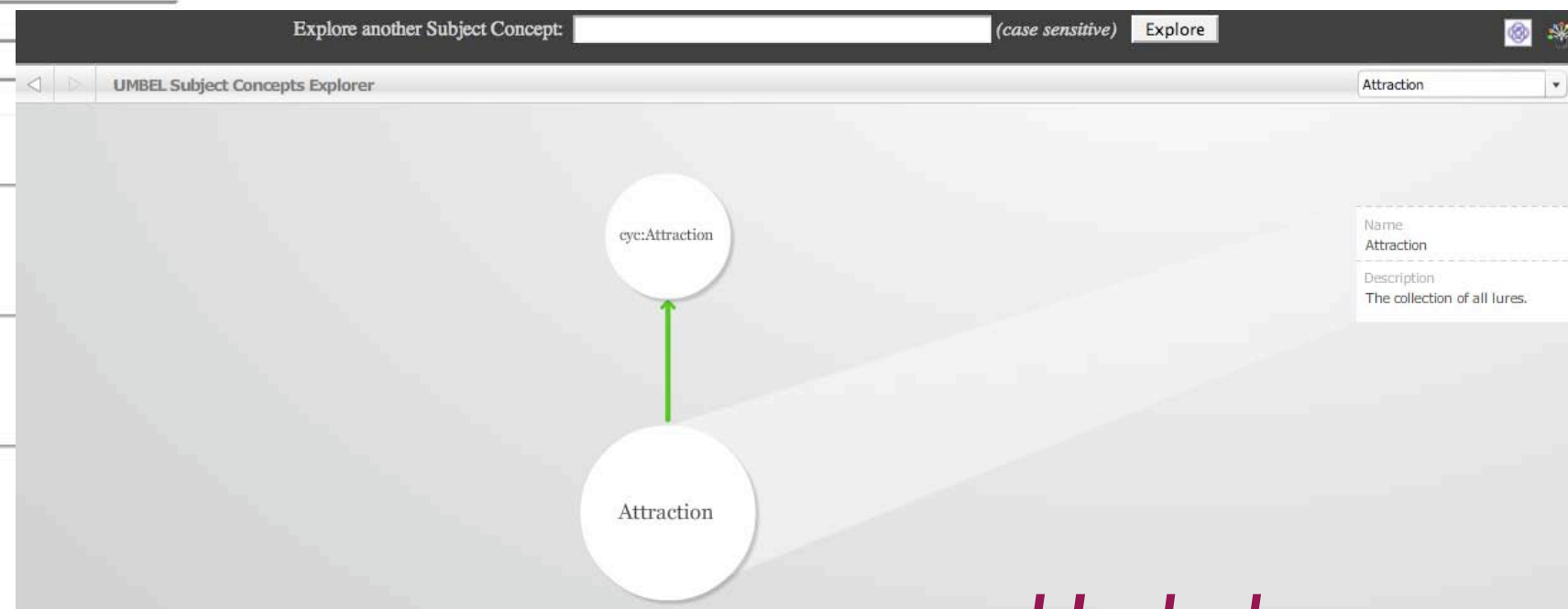
?id0:  ?   
?id1:   
?id2:

?desire = [desire](#)  
?what0 = [subClassOf](#)  
?x = [tendency](#)

?desire = [desire](#)  
?what0 = [subClassOf](#)  
?x = [feeling](#)

?desire = [desire](#)  
?what0 = [subClassOf](#)  
?x = [arousal](#)

Yago



Umbel

freebase<sup>™</sup>  
alpha

[Home](#) [Data](#) [Apps](#) [Discuss](#) [Help](#) | [Please sign in or register to contribute](#)

## Search Results

### Narrow Results

Type

Items 1 - 30 of 60+

#### Desire



*Song, Composition*

"Desire" is the lead single from U2's 1988 album, Rattle and Hum. It was also their first #1 single in the UK. It reached #3 on the Billboard Hot 100 in the US, and reached #1 on both the Mainstream and Modern Rock Tracks charts, the first song to reach the top of both of these charts. "Desire" debuted live on the first night of the Lovetown Tour on 21 September 1988, and appeared at almost every concert on that tour. It segued into a cover of Bob Dylan's "All Along the Watchtower", and the...

#### Desire



*Musical Album*

Desire is singer-songwriter Bob Dylan's 17th studio album, released by Columbia Records in 1976. It is one of Dylan's most collaborative efforts, featuring the same caravan of musicians from the acclaimed Rolling Thunder Revue tours the previous year (later documented on The Bootleg Series Vol. 5). Most of the album was co-written by Jacques Levy, and is composed of lengthy story-songs, two of which quickly generated controversy: the over 11-minute long "Joey", which is seen as glorifying the...

#### Desire



*TV Program*

Desire is an American telenovela which debuted at 8 p.m. ET/7 p.m. CT on September 5, 2006, on the American network MyNetworkTV, and ended on December 5. It was produced by Twentieth Television. The program starred Sofia Milos, Michelle Beleguin, Nate Haden, Kelly Albanese, Zack Silva, Jessie Ward, Tanisha Harper. Haden and Silva played two brothers on the run from the Gamarras, a New Jersey crime family. They run from Bayonne to Los Angeles and become restaurateurs. Along the way, the pair...

#### Desire

*Comic Book Character, Fictional Character*

Desire is one of the Endless, a fictional character from Neil Gaiman's comic book series, The Sandman. Desire is the third youngest of the Endless and the twin of Despair. It is a strikingly beautiful figure whose gender is mutable, becoming male, female, both, or neither as the situation warrants. It is often referred to as "sister-brother" by its siblings, particularly Dream. Desire blends in effortlessly with whatever environment it finds itself in. It lives in the heart of a massive flesh...

#### Desire



"Desire" is a song recorded by Swedish singer Darin. It was released as the third single (and first digital only) from Darin's third studio album Break the News in Sweden on May 7 2007. In Germany and selected other European countries, it was released as the album's second single on December 7 2007. Darin performed the song on the finale of the German Popstars on December 6 2007. "Desire" debuted in Germany at number fifty-three in the last week of 2007.

Freebase

everything based on a  
centralized ontology ...  
of mixed quality

STLab

The Semantic Technology Lab  
IST C-CNR Rome

# Microformats

## \* hCal

```
<span class="vevent">
  <p><abbr class="dtstart" title="2006-12-05">December 5-</abbr>
  <abbr class="dtend" title="2006-12-07">7th</abbr>
  </b> At <b><span class="summary">;XML 2006</span></b>
  (<span class="location">Boston, MA USA</span>)
  for a presentation on "Social Semantic Mashups".</span>
```

## \* XFN for Social Networks

```
<li><a href="http://www.w3.org/People/Connolly/" rel="colleague">Dan Connolly</a></li>
<li><a href="http://seanmcgrath.blogspot.com/" rel="colleague">Sean McGrath</a></li>
<li><a href="http://www.jclark.com/" rel="colleague">James Clark</a></li>
```

## \* hCard Example

```
<div class="vcard"><p>
  <span class="fn n">
    <span class="given-name">Harry </span>
    <span class="additional-name">Reeves</span>
    <span class="family-name"> Halpin</span></p>
  <p><span class="tel">+44-131-650-4421</span></p>
  <table><tr><td>
    <span class="street-address">2 Buccleuch Place</span>
```

# Microformats issues and GRDDL

The main problem with microformats is that they put your data into HTML,  
but you have no standard way to get the data out.

Another problem is that they cannot be validated easily.

You can mix hCard and hCal and there's no way to guarantee you will interpret it correctly.  
Domain-specific: You can not make a microformat for just anything!

With GRDDL, microformat data can be viewed as Semantic Web data

Gleaning Resource Descriptions from Dialects of Languages

A markup for declaring that an XML document includes gleanable data (PROFILE)

linking to an algorithm (typically XSLT) for gleaning the RDF data from the document  
(TRANSFORMATION)

- \* A large number of web sites are using microformats:
- \* Eventful
- \* LinkedIn
- \* Yedda
- \* Yahoo! Local
- \* Yahoo! Tech Reviews
- \* Dreamweaver plug-in to help authors

**credits Gandon-  
Halpin-Adida**

# Linking Open Data

LOD Presentation by K. Idehen



OpenLink Data Explorer

chrome://ode/content/ode/index.html?uri[]=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FThird\_Crusade

Getting Started Latest Headlines Amazon Apple .Mac eBay Yahoo! eBay Apple News Notizie Yahoo! Apple

Indirizzi Contatti Eventi Percorsi Tag Segnalibri Resources Opzioni...

W Third Crusade - ... OpenLink Data Ex... SIOC Browser OpenLink Data Ex... Creating, Deployin... Virtuoso Sponger (...) Form Designer

# OPENLINK Data Explorer

Data Source URI

Query Find

What Where When Who Images Grid view Tag Cloud SVG Graph Raw triples Custom

This module displays all filtered triples.

**Cache** Total 218 triples [Check All](#) [Uncheck All](#) [Invert Selection](#) [Purge Cache](#) [Refresh All](#) [Permalink](#)

- ☒ [Third Crusade - Wikipedia, the free encyclopedia](#) - 106 triples - [Remove](#) - [Refresh](#) - [Permalink](#)
- ☒ [http://dbpedia.org/resource/Al-Adil](#) - 1 triples - [Remove](#) - [Refresh](#) - [Permalink](#)
- ☒ [http://dbpedia.org/resource/Akko](#) - 5 triples - [Remove](#) - [Refresh](#) - [Permalink](#)
- ☒ [Third Crusade - Wikipedia, the free encyclopedia](#) - 106 triples - [Remove](#) - [Refresh](#) - [Permalink](#)

There are 148 triples available.  
Page: 1 2

Human readable visible columns

#	Subject	Predicate	Object
1	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Al-Adil</a>
2	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Des Inscriptions et Belles-Lettres</a>
3	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Akko</a>
4	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">1191</a>
5	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">1192</a>
6	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">AcadAAA@mie</a>
7	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">I</a>
8	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">1189</a>
9	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">1190</a>
10	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Crusades</a>
11	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">1188</a>
12	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Albigensian</a>
13	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Crusade</a>
14	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Campaignbox</a>
15	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Third</a>
16	<a href="#">Third Crusade</a>	<a href="#">subject</a>	<a href="#">Al-Adil</a>

Categories

- type (5)
  - [any] (24)
  - Document (1)
  - Document (1)
  - Container (1)
  - DataSource (6)
  - Concept (15)

Filters

- Previous Queries
- Bookmarks
- Data Retrieval Options
- Data Explorer Options

1	Third Crusade	subject	Al-Adil
2	Third Crusade	subject	Des Inscriptions et Belles-Lettres
3	Third Crusade	subject	Akko
4	Third Crusade	subject	1191
5	Third Crusade	subject	1192
6	Third Crusade	subject	AcadAAA@mie
7	Third Crusade	subject	I
8	Third Crusade	subject	1189
9	Third Crusade	subject	1190
10	Third Crusade	subject	Crusades
11	Third Crusade	subject	1188
12	Third Crusade	subject	Albigensian
13	Third Crusade	subject	Crusade
14	Third Crusade	subject	Campaignbox
15	Third Crusade	subject	Third
16	Third Crusade	subject	Al-Adil

RDF triples can contain all sorts of relations, as shown with reference to DBpedia triples related to the Third Crusade: *subjects*, *alternate pages*, *copyright forms*, *types*, *icons*, etc. are all related to the Third Crusade page in a way that makes the results of the search still confusing (although better than googling, or

OpenLink Data Explorer

chrome://ode/content/ode/index.html?uri[]=http%3A%2F%2Fen.wikipedia.org%2Fwiki%2FThird\_Crusade

Getting Started Latest Headlines Amazon Apple .Mac eBay Yahoo! eBay Apple News Notizie Yahoo! Apple

Indirizzi Contatti Eventi Percorsi Tag Segnalibri Resources Opzioni...

W Third Crusade - ... OpenLink Data Ex... SIOC Browser OpenLink Data Ex... Creating, Deployin... Virtuoso Sponger (...) Form Designer

[http://en.wikipedia.org/wiki/Third\\_Crusade](#)

**subject:** [http://dbpedia.org/resource/Al-Adil](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Des Inscriptions et Belles-Lettres](#), [http://dbpedia.org/resource/Akko](#), [http://dbpedia.org/resource/1191](#), [http://dbpedia.org/resource/1192](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#AcadAAA@mie](#), [http://dbpedia.org/resource/I](#), [http://dbpedia.org/resource/1189](#), [http://dbpedia.org/resource/1190](#), [http://dbpedia.org/resource/Crusades](#), [http://dbpedia.org/resource/1188](#), [http://dbpedia.org/resource/Albigensian](#), [http://dbpedia.org/resource/Crusade](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Campaignbox](#), [http://dbpedia.org/resource/Third](#), [http://dbpedia.org/resource/Al-Adil](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Des Inscriptions et Belles-Lettres](#), [http://dbpedia.org/resource/Akko](#), [http://dbpedia.org/resource/1191](#), [http://dbpedia.org/resource/1192](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#AcadAAA@mie](#), [http://dbpedia.org/resource/I](#), [http://dbpedia.org/resource/1189](#), [http://dbpedia.org/resource/1190](#), [http://dbpedia.org/resource/Crusades](#), [http://dbpedia.org/resource/1188](#), [http://dbpedia.org/resource/Albigensian](#), [http://dbpedia.org/resource/Crusade](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Campaignbox](#), [http://dbpedia.org/resource/Third](#)

**alternate:** [http://en.wikipedia.org/w/index.php?title=Third\\_Crusade&action=edit](#), [http://en.wikipedia.org/w/index.php?title=Special:RecentChanges&feed=atom](#), [http://en.wikipedia.org/w/index.php?title=Special:RecentChanges&feed=rss](#)

**type:** [http://xmlns.com/foaf/0.1/Document](#), [http://purl.org/ontology/bibo/Document](#), [http://rdfs.org/sioc/ns#Container](#)

**search:** [http://en.wikipedia.org/w/openserch\\_desc.php](#)

**isDefinedBy:** [http://www.w3.org/2000/01/rdf-schema#](#), [http://www.w3.org/2004/02/skos/core#](#), [http://purl.org/dc/elements/1.1/](#), [http://rdfs.org/sioc/ns#](#), [http://xmlns.com/foaf/0.1/](#), [http://www.w3.org/1999/02/22-rdf-syntax-ns#](#), [http://www.w3.org/2000/01/rdf-schema#](#), [http://www.w3.org/2004/02/skos/core#](#), [http://purl.org/dc/elements/1.1/](#), [http://rdfs.org/sioc/ns#](#), [http://xmlns.com/foaf/0.1/](#), [http://www.w3.org/1999/02/22-rdf-syntax-ns#](#)

**topic:** [http://dbpedia.org/resource/Albigensian](#), [http://dbpedia.org/resource/1191](#), [http://dbpedia.org/resource/1192](#), [http://dbpedia.org/resource/Third](#), [http://dbpedia.org/resource/Crusade](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Campaignbox](#), [http://dbpedia.org/resource/Crusades](#), [http://dbpedia.org/resource/1188](#), [http://dbpedia.org/resource/1189](#), [http://dbpedia.org/resource/1190](#), [http://dbpedia.org/resource/I](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#AcadAAA@mie](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Des Inscriptions et Belles-Lettres](#), [http://dbpedia.org/resource/Akko](#), [http://dbpedia.org/resource/Al-Adil](#), [http://dbpedia.org/resource/Albigensian](#), [http://dbpedia.org/resource/1191](#), [http://dbpedia.org/resource/1192](#), [http://dbpedia.org/resource/Third](#), [http://dbpedia.org/resource/Crusade](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Campaignbox](#), [http://dbpedia.org/resource/Crusades](#), [http://dbpedia.org/resource/1188](#), [http://dbpedia.org/resource/1189](#), [http://dbpedia.org/resource/1190](#), [http://dbpedia.org/resource/I](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#AcadAAA@mie](#), [http://en.wikipedia.org/wiki/Third\\_Crusade#Des Inscriptions et Belles-Lettres](#), [http://dbpedia.org/resource/Akko](#), [http://dbpedia.org/resource/Al-Adil](#)

**seeAlso:** [http://en.wikipedia.org/w/index.php?title=Special:RecentChanges&feed=atom](#), [http://en.wikipedia.org/w/index.php?title=Third\\_Crusade&action=edit](#), [http://en.wikipedia.org/w/index.php?title=Special:RecentChanges&feed=rss](#)

**nofollow:** [http://www.kingdomofheavenmovie.com](#), [http://en.wikipedia.org/w/index.php?title=Template:Campaignbox\\_Crusades&action=edit](#), [http://www.shadowedrealm.com/articles/exclusive/article.php?id=17](#)

**copyright:** [http://www.gnu.org/copyleft/fdl.html](#)

Completo



Now we have all those data expressed in a language that allows semantic interoperability ...



# What we can do with OWL

... (maybe) we can check the consistency, classify, and query all this knowledge

this is great, but ...

... when I locally reuse parts of such a big bunch of knowledge, inferences sometimes produce strange results:

a web page same as an email address (e.g. `http://.../Aldo owl:sameAs mailto://aldo@...`)

a person same as a wikipedia article (e.g. `Aldo owl:sameAs http://en.wikipedia.org/Aldo`)

Italy is a continent (e.g. `(Italy rdf:type (Country) rdfs:subClassOf Continent)`)

...

... and problems are hardly fixable on a large scale

Logical consistency is not the main problem

e.g. `owl:sameAs` can be wrongly used and still we have consistency

Why OWL is not enough?

# When to use owl:Individual, Class, ObjectProperty, DatatypeProperty?

OWL gives us logical language constructs, but does not give us any guidelines on how to use them in order to solve our tasks. E.g. modeling something as a class or an object property is mostly arbitrary

cf. Semantic Web Interest Group ([semantic-web@w3.org](mailto:semantic-web@w3.org)) post on May 27th, 2008 by Zille Huma:

"I have been wondering for sometime now that why isn't it a popular trend to store standard activities of a domain in the ontology and not only the concepts, e.g., for the tourism domain, ontologies normally contain concepts like Tourist, Resort, etc. but I have not so far come across an ontology that also contains the standard activities like searchResort, bookHotel, etc. Why is it so? What support is provided in the ontology languages to model the standard activities of the domain as well?"

(1) a functionality for searching resorts is implemented in our web service

```
owl:Individual(searchResort) rdf:type(Functionality)
```

(2) searching resorts is a type of functionality required for this kind of services

```
owl:Class(searchResort) rdfs:subClassOf(Functionality)
```

(3) who has been searching for what resorts in our web service?

```
owl:ObjectProperty(searchResort) rdfs:range(Resort)
```

(4) how many users have been using our resort searching functionality?

```
owl:DatatypeProperty(searchResort) rdfs:range(xsd:boolean)
```

# solutions?

... OWL is not enough for building a good ontology and we cannot ask all web users either to learn logic, or to study ontology design

Reusable solutions are described as “Ontology Design Patterns”, which help reducing arbitrariness without asking for sophisticated skills ...

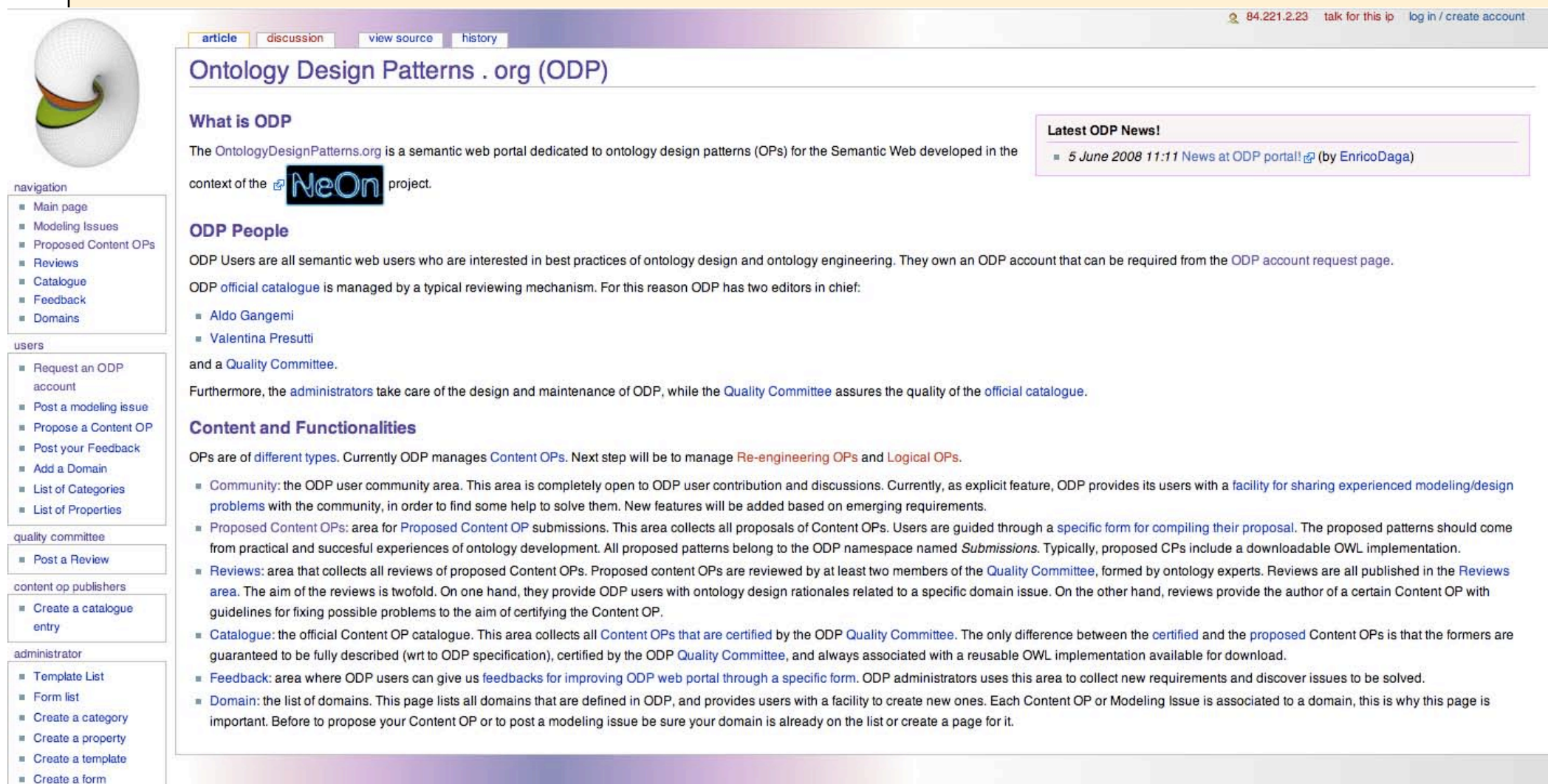
... provided that good tools will be built :)



# Ontology Design Patterns (OP)

## Definition

An Ontology Design Pattern is a modeling solution to solve a recurrent ontology design problem



The screenshot shows the homepage of the Ontology Design Patterns (ODP) website. The page has a light blue header with navigation tabs: 'article', 'discussion', 'view source', and 'history'. The main title is 'Ontology Design Patterns . org (ODP)'. Below the title, there is a section 'What is ODP' which states that the portal is dedicated to ontology design patterns (OPs) for the Semantic Web, developed in the context of the NeOn project. To the right of this section is a 'Latest ODP News!' box with a news item dated 5 June 2008. Below the 'What is ODP' section is 'ODP People', which lists Aldo Gangemi and Valentina Presutti as editors in chief, and mentions the Quality Committee and administrators. Further down is 'Content and Functionalities', which describes the types of OPs managed (Content, Re-engineering, Logical) and lists several functional areas: Community, Proposed Content OPs, Reviews, Catalogue, Feedback, and Domain. On the left side of the page, there is a 'navigation' menu with links to Main page, Modeling Issues, Proposed Content OPs, Reviews, Catalogue, Feedback, and Domains. Below this is a 'users' section with links to Request an ODP account, Post a modeling issue, Propose a Content OP, Post your Feedback, Add a Domain, List of Categories, and List of Properties. Further down is a 'quality committee' section with a link to Post a Review. Below that is a 'content op publishers' section with a link to Create a catalogue entry. At the bottom is an 'administrator' section with links to Template List, Form list, Create a category, Create a property, Create a template, and Create a form.

84.221.2.23 talk for this ip log in / create account

### Ontology Design Patterns . org (ODP)

**What is ODP**

The OntologyDesignPatterns.org is a semantic web portal dedicated to ontology design patterns (OPs) for the Semantic Web developed in the context of the **NeOn** project.

**Latest ODP News!**

- 5 June 2008 11:11 News at ODP portal! (by EnricoDaga)

**ODP People**

ODP Users are all semantic web users who are interested in best practices of ontology design and ontology engineering. They own an ODP account that can be required from the [ODP account request page](#).

ODP [official catalogue](#) is managed by a typical reviewing mechanism. For this reason ODP has two editors in chief:

- Aldo Gangemi
- Valentina Presutti

and a [Quality Committee](#).

Furthermore, the [administrators](#) take care of the design and maintenance of ODP, while the [Quality Committee](#) assures the quality of the [official catalogue](#).

**Content and Functionalities**

OPs are of [different types](#). Currently ODP manages [Content OPs](#). Next step will be to manage [Re-engineering OPs](#) and [Logical OPs](#).

- Community:** the ODP user community area. This area is completely open to ODP user contribution and discussions. Currently, as explicit feature, ODP provides its users with a [facility for sharing experienced modeling/design problems](#) with the community, in order to find some help to solve them. New features will be added based on emerging requirements.
- Proposed Content OPs:** area for [Proposed Content OP](#) submissions. This area collects all proposals of Content OPs. Users are guided through a [specific form for compiling their proposal](#). The proposed patterns should come from practical and successful experiences of ontology development. All proposed patterns belong to the ODP namespace named [Submissions](#). Typically, proposed CPs include a downloadable OWL implementation.
- Reviews:** area that collects all reviews of proposed Content OPs. Proposed content OPs are reviewed by at least two members of the [Quality Committee](#), formed by ontology experts. Reviews are all published in the [Reviews area](#). The aim of the reviews is twofold. On one hand, they provide ODP users with ontology design rationales related to a specific domain issue. On the other hand, reviews provide the author of a certain Content OP with guidelines for fixing possible problems to the aim of certifying the Content OP.
- Catalogue:** the official Content OP catalogue. This area collects all [Content OPs that are certified](#) by the ODP [Quality Committee](#). The only difference between the [certified](#) and the [proposed](#) Content OPs is that the formers are guaranteed to be fully described (wrt to ODP specification), certified by the ODP [Quality Committee](#), and always associated with a reusable OWL implementation available for download.
- Feedback:** area where ODP users can give us [feedbacks for improving ODP web portal through a specific form](#). ODP administrators uses this area to collect new requirements and discover issues to be solved.
- Domain:** the list of domains. This page lists all domains that are defined in ODP, and provides users with a facility to create new ones. Each Content OP or Modeling Issue is associated to a domain, this is why this page is important. Before to propose your Content OP or to post a modeling issue be sure your domain is already on the list or create a page for it.

**navigation**

- Main page
- Modeling Issues
- Proposed Content OPs
- Reviews
- Catalogue
- Feedback
- Domains

**users**

- Request an ODP account
- Post a modeling issue
- Propose a Content OP
- Post your Feedback
- Add a Domain
- List of Categories
- List of Properties

**quality committee**

- Post a Review

**content op publishers**

- Create a catalogue entry

**administrator**

- Template List
- Form list
- Create a category
- Create a property
- Create a template
- Create a form