

Library Linked Data: Representations of "aboutness"

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Nasjonalbiblioteket

Aboutness

Subject (subject matter; subject-predicate)

Topic (topicality; topic/comment)

Theme (with “central theme” and the German “leitmotiv”)

Domain (cognitive domain, scientific domain)

Field (information field, field of knowledge, field of research)

Content

Information

Etc. (including related terms such as discipline and concept)

Towards a Theory of Aboutness, Subject, Topicality, Theme, Domain, Field, Content and Relevance / Birger Hjørland

Outline

1. Representing aboutness: A brief history of knowledge organisation (subject headings and classification) within library science.
2. Representations of knowledge organisation systems: From free text to MARC to SKOS / Linked Data.
3. Taking advantage of different representations of knowledge organisation systems: From tools for the classifier to tools for end-users. Examples.

A brief history of KOS in library science

Rules for a Printed Dictionary Catalog, 1876

-Charles Ammi Cutter

1. to enable a person to find a book of which either the author, the title, **the subject** or **the category** is known.
2. to show what the library has by a given author, on a given **subject**, in a given kind of literature
3. to assist in the choice of a book as to its edition, as to its character



Each book is represented by one or more catalog cards.

Strict rules developed for the representation of:

- Authors
- Other responsible actors
- Title
- Edition, format, publisher
- **Subject**

Subject cataloging

Subject headings

- Controlled vocabularies
 - Preferred terms
- Hierarchical and equivocal relationships
- Precoordinated vs postcoordinated headings
- Retrieval
- Library of Congress Subject Headings (LCSH)

Classification schemes

- Numbers and symbols representing concepts
- Universal vs special classifications
- Concepts described by words
- Hierarchical and equivocal relationships
- Shelf order and retrieval
- **Dewey Decimal Classification**

The hierarchical structure of Dewey

- 000 Informatikk, informasjonsvitenskap og generelle verker
- 100 Filosofi og psykologi
- 200 Religion
- 300 Samfunnsvitenskap
- 400 Språk og språkvitenskap
- 500 Naturvitenskap
- 600 Teknologi
- 700 Kunst og fritid
 - 710 Landskapsutforming og arealplanlegging
 - 720 Arkitektur
 - 730 Skulptur; keramisk kunst og metallkunst
 - 740 Tegnekunst og kunsthåndverk
 - 750 Malerkunst
 - 760 Grafiske kunstarter
 - 770 Fotografi og datakunst
 - 770 Fotografi, fotografier og datakunst
 - 771 Teknikker, utstyr og materialer
 - 772 Metallsaltprosesser
 - 773 Pigmentprosesser for trykking
 - 774 Holografi
 - 775 Digitalt fotografi
 - 776 Datakunst (Digital kunst)
 - 777 [Ubenyttet]
 - 778 Fagområder og typer fotografering
 - 779 Fotografier
 - 780 Musikk
 - 790 Sport, spill og underholdning
- 800 Litteratur
- 900 Historie og geografi

- 3 Social sciences
- 38 Commerce, communications, transportation
- 387 Water, air, space transportation
- 387.1 Ports
- 387.15 Port facilities
- 387.153 Freight terminals

Dewey number
(from the Bibsys
catalog):
082
\$a387.153

Antall treff: 334

Tittel Oslo havns rolle i samfunnet : delutredning til Transport, havn og miljø - en strategi for miljøvennlig godstransport

Navn Hanssen, Per Mauritz
Rekdal, Per Gisle
Oslo havnevesen
Transport, havn og miljø(prosjekt)
Norsk institutt for by- og regionforskning

Publisert no : Oslo kommune, Havnevesenet , 1999

Språk Norsk (bokmål)

Omfang 80 s. ill.

Andre opplysninger utført av Norsk institutt for by- og regionforskning, NIBR ; [prosjektansvarlig: Per Mauritz Hanssen ; prosjektleder: Per Gisle Rekdal]
Over tittelen: Utviklingsplan for Oslo havn 2000-2020

Emne Havnevesen/Havneområder/havner terminaler stykkgoods utviklingsplaner Oslo

Omtalt/avbildet sted Oslo

Klassifikasjon 387.153 656.615(481.13) 711.553.4/056

Kilde <http://ask.bibsys.no/ask/action/show?pid=990652807&kid=biblio>

Kilde for metadata Bibsys

A rose is a rose is a rose

Rosa (latinsk)

Rose (norsk)

Rose (engelsk)

Ros (svensk)

Tãng (vietnamesisk)



Banksianae

Bracteatae

Caninae

Carolinae

Chinensis

Gallicanae

Gymnocarpae

Laevigatae

Pimpinellifoliae

Synstylae

- 5 Natural sciences and mathematics
- 58 Plants
- 583 Magnoliopsida (Dicotyledons)
- 583.7 Rosidae
- 583.73 Rosales
- 583.734 Rosa (Roses)

Representations of KOS

From human readability:

—014 **Language and communication**

Including content analysis, semiotics; etymology; pronunciation, spelling

Class here terminology



Class subject headings and thesauri in information retrieval in 025.49001–25.49999; class interdisciplinary works on communication, semiotics in 302.2; class interdisciplinary works on language in 400; class interdisciplinary works on terminology in 401.4; class interdisciplinary works on etymology in 412. Class aspects of linguistics not provided for here with the aspect in 400, e.g., translating 418.02; class readers for nonnative speakers of a specific language intended to instill a knowledge of the special vocabulary of that language for a specific subject with the language in 400, plus notation 864 from Table 4, e.g., engineering readers (in a language other than Spanish) for Spanish-speaking people —8646102462, English-language engineering readers for Spanish-speaking people 428.646102462

For dictionaries, see —03

to machine readability...→

MARC 21 Format for classification data

583.73

Classification scheme

Edition

Language

Classification number

Broader number

Class heading

Index term

Source

Index term

Broader index term

Source

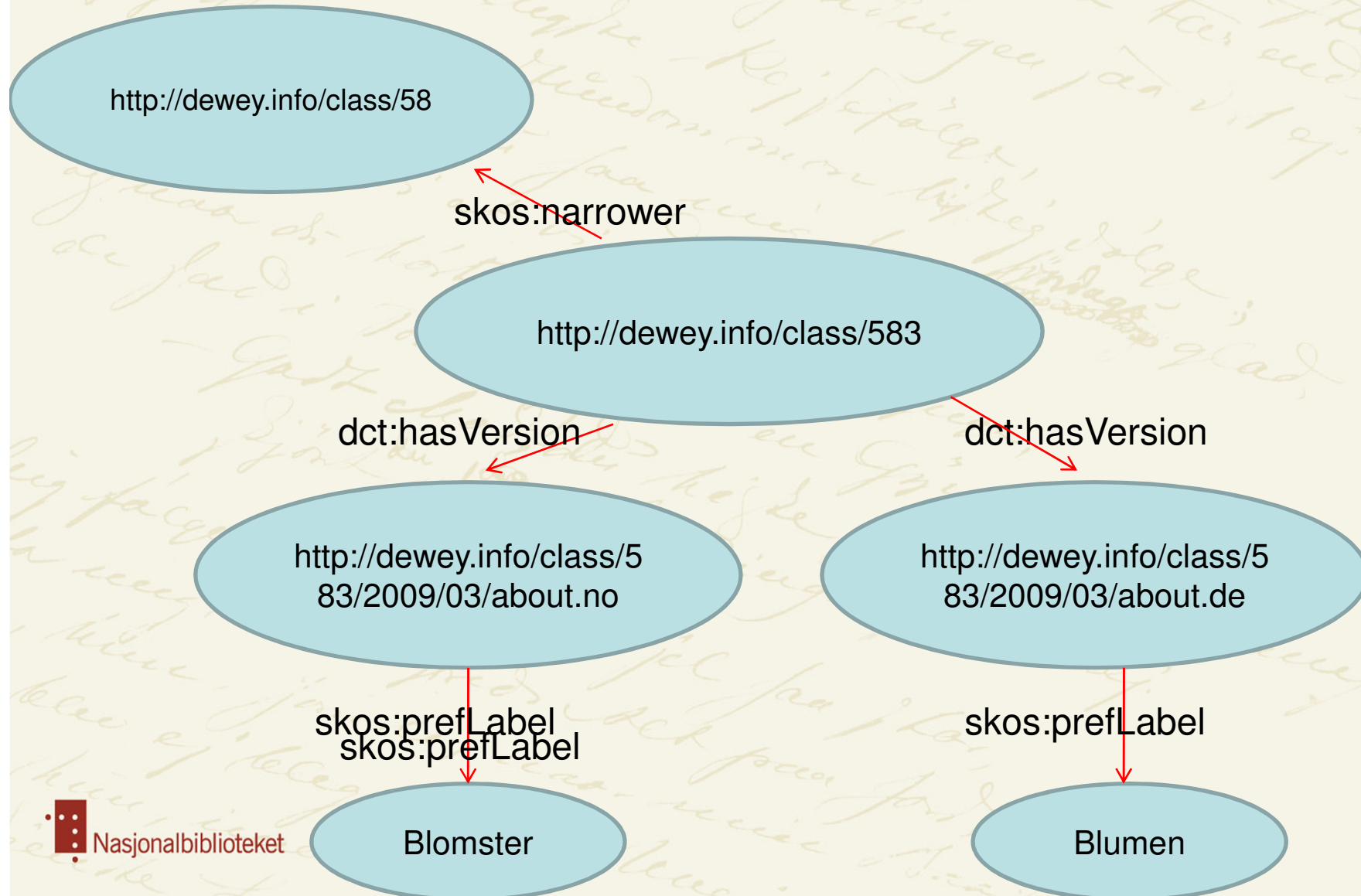
```
<mx:datafield tag="084" ind1="0" ind2=" " >  
  <mx:subfield code="a">ddc</mx:subfield>  
  <mx:subfield code="c">22</mx:subfield>  
  <mx:subfield code="e">nor</mx:subfield>  
</mx:datafield>
```

```
<mx:datafield tag="153" ind1=" " ind2=" " >  
  <mx:subfield code="a">583.734</mx:subfield>  
  <mx:subfield code="e">583.73</mx:subfield>  
  <mx:subfield code="g">* </mx:subfield>  
  <mx:subfield code="j">Rosa (Roses)</mx:subfield>  
  <mx:subfield code="9">ess=en</mx:subfield>  
  <mx:subfield code="9">ess=eh</mx:subfield>  
</mx:datafield>
```

```
<mx:datafield tag="750" ind1=" " ind2="7">  
  <mx:subfield code="a">Rosa (Roses)</mx:subfield>  
  <mx:subfield code="2">ddcri</mx:subfield>  
  <mx:subfield code="9">ess=ieh</mx:subfield>  
  <mx:subfield code="9">ps=PE</mx:subfield>  
  <mx:subfield code="9">och00107206</mx:subfield>  
</mx:datafield>
```

```
<mx:datafield tag="750" ind1=" " ind2="7">  
  <mx:subfield code="a">Roses</mx:subfield>  
  <mx:subfield code="x">botany</mx:subfield>  
  <mx:subfield code="2">ddcri</mx:subfield>  
  <mx:subfield code="9">ess=ieh</mx:subfield>  
  <mx:subfield code="9">ps=PE</mx:subfield>  
  <mx:subfield code="9">och00107232</mx:subfield>  
</mx:datafield>
```

Dewey as Linked data



Dewey.info

- The 3 top levels of Dewey are available as Linked data
- 11 språk (inkludert norsk) knyttet til numrene

Dewey Decimal Classification	
en	641 Food and drink http://dewey.info/schema/s14/
641.01 Philosophy and theory 641.2 Beverages (Drinks) 641.3 Food 641.4 Food preservation and storage 641.5 Cooking 641.6 Cooking specific materials 641.7 Specific cooking processes and techniques 641.8 Cooking specific kinds of dishes, preparing beverages	
es	640 Gerencia de la casa y vida familiar http://dewey.info/schema/s22/
641	Alimentos y bebidas
fr	640 Gestion de la vie familiale http://dewey.info/schema/s22/
641	Nourriture et boisson
it	641 Cibi e bevande http://dewey.info/schema/s14/
641.01 Filosofia e teoria 641.2 Bevande 641.3 Alimenti 641.4 Conservazione e immagazzinamento degli alimenti 641.5 Cucina 641.6 Cucina di specifici alimenti 641.7 Specifici metodi e tecniche di cucina 641.8 Cucina di specifici tipi di piatto, preparazione di bevande	
no	640 Husholdning og familieleiv http://dewey.info/schema/s22/
641	Mat og drikke
pt	640 Gerenciamento da casa e familia http://dewey.info/schema/s22/

SPARQL <http://dewey.info/sparql.php>

```
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
```

```
PREFIX dct: <http://purl.org/dc/terms/>
```

```
SELECT DISTINCT ?notation ?prefLabel
```

```
WHERE {
```

```
  _:s skos:topConceptOf _:o ;
```

```
  skos:prefLabel ?prefLabel ;
```

```
  skos:notation ?notation .
```

```
  FILTER langMatches( lang(?prefLabel), "no" )
```

```
} ORDER BY ASC(?notation)
```

```
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
```

```
PREFIX dct: <http://purl.org/dc/terms/>
```

```
SELECT DISTINCT ?narrower ?notation ?label
```

```
WHERE {
```

```
  <http://dewey.info/class/71/2010/03/about.no> skos:narrower
```

```
  ?narrower .
```

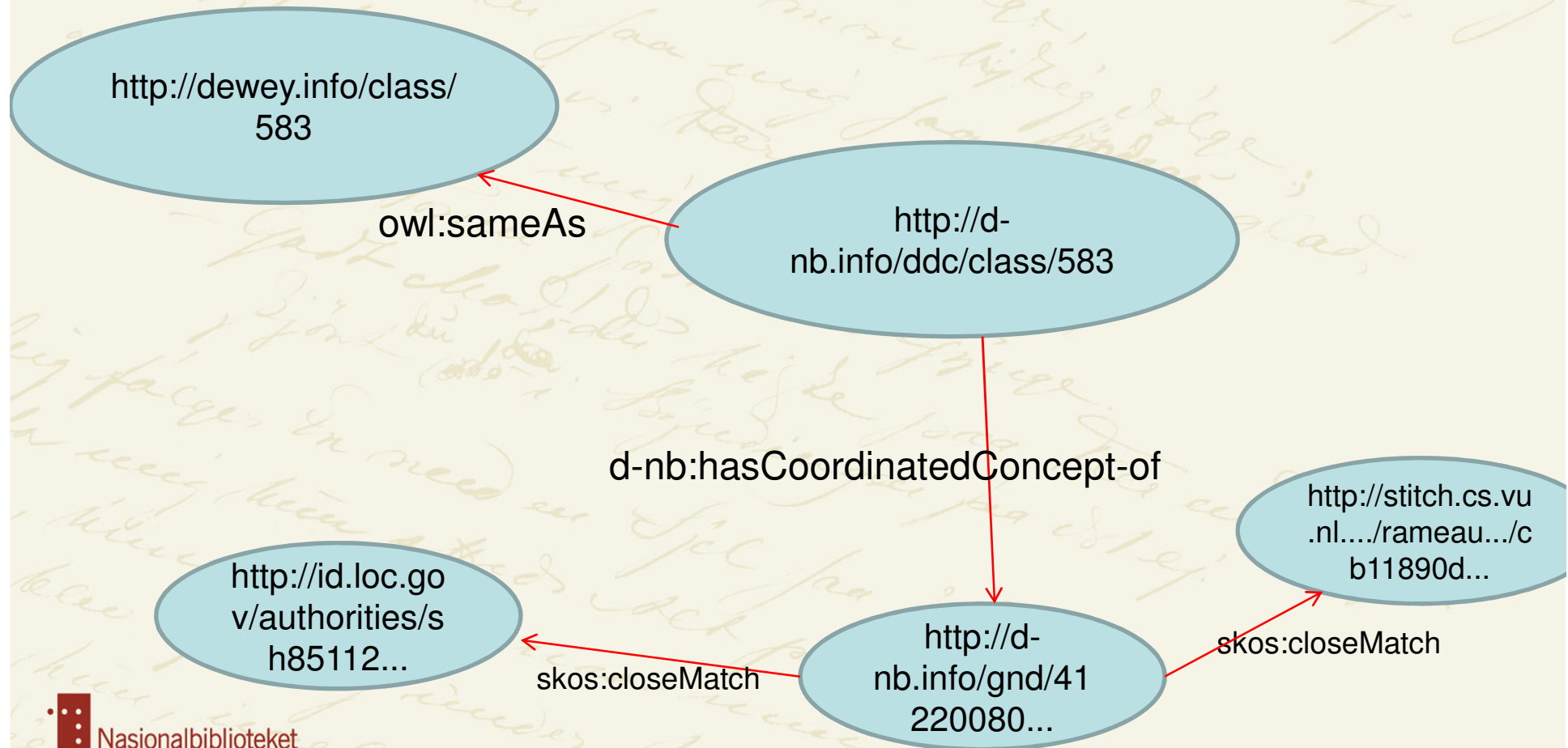
```
  ?narrower skos:notation ?notation .
```

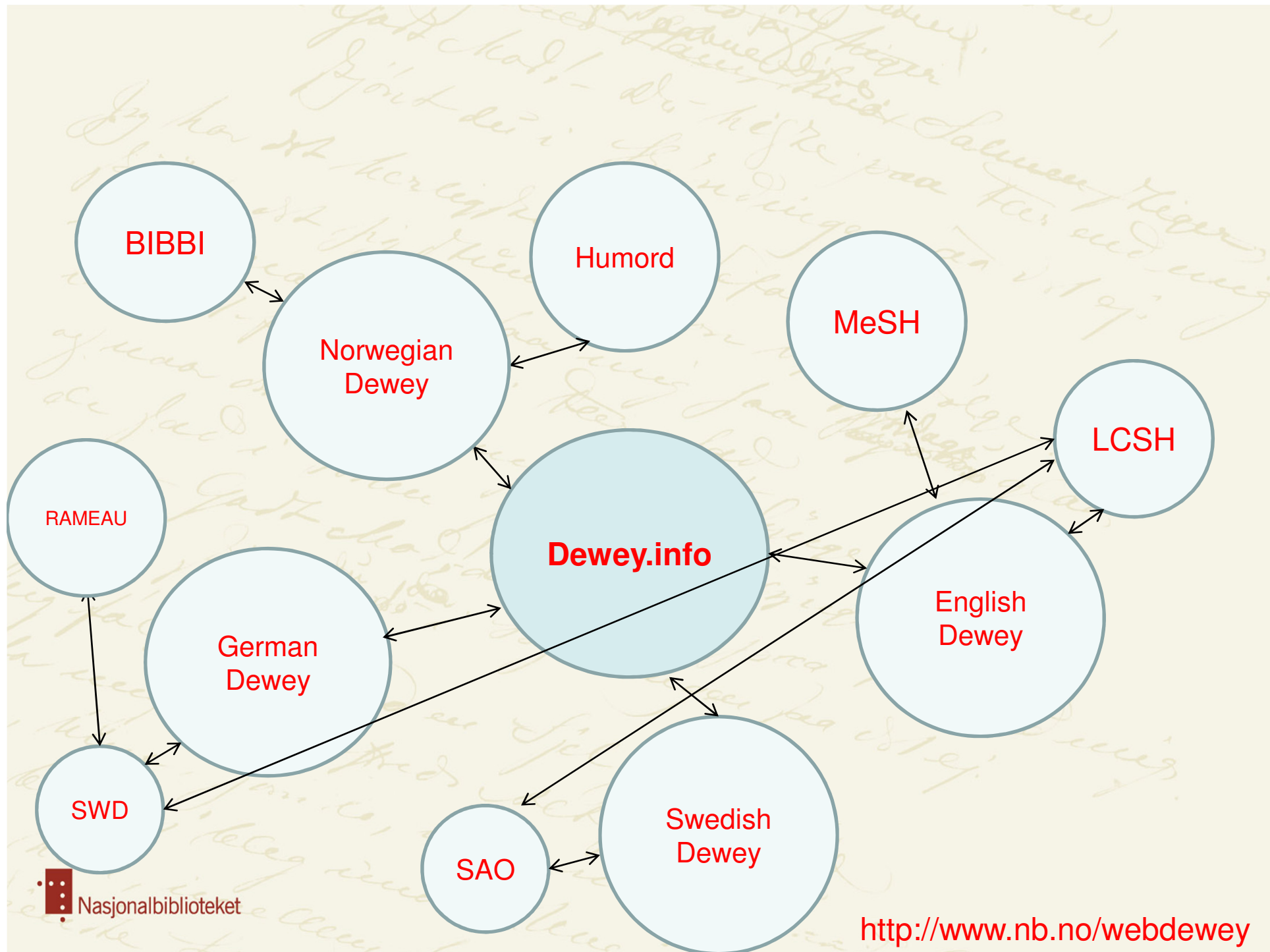
```
  ?narrower skos:prefLabel ?label .
```

```
  ?narrower dct:language "no" .
```

```
} ORDER BY ASC(?notation)
```

German language Dewey as Linked data





Taking advantage of different representations of KOS

Human readable representations

→ Classifier, cataloger

Machine readable representations

→ Systems developers

Machine readability: Words connected to Dewey numbers in MelvilSearch

Suche mit der Dewey-Dezimalklassifikation
Gemeinsamer Bibliotheksverbund

Browsing

Impressum

Copyright

Hilfe

Suchbegriff oder DDC-Notation

Suchen

Notation	Thema	Treffer
	DDC-Übersicht	0 Titel
300	Sozialwissenschaften	1 Titel
370	Bildung und Erziehung	0 Titel
370	Bildung und Erziehung	8257 Titel
370.1	Philosophie und Theorie, Bildung und Erziehung mit spezifischen Zielen, pädagogische Psychologie	1224 Titel
370.11	Bildung und Erziehung mit spezifischen Zielen	129 Titel
370.113	Berufliche Bildung	142 Titel
	<ul style="list-style-type: none"> • Für berufliche Bildung in der Sekundarstufe siehe Berufsbildende Schulen ; • für berufliche Bildung für Erwachsene siehe Berufliche Bildung—Erwachsene 	
370.113085	Eltern—berufliche Bildung	0 Titel
370.1130941	Berufliche Bildung—Großbritannien	18 Titel
370.1130973	Berufliche Bildung—USA	20 Titel

Dewey.info: Languages linked to Dewey numbers in PODE's LinkedNonFictionWeb

LinkedNonFictionWeb

Dewey-språk: Dokumentetspråk:

000 Informatikk, informasjonsvitenskap og generelle verker (0)
100 Filosofi og psykologi (0)
200 Religion (0)
300 Samfunnsvitenskap (3)
400 Språk og språkvitenskap (1)
500 Naturvitenskap (0)
600 Teknologi (0)
700 Kunst og fritid (0)
800 Litteratur (0)
900 Historie og geografi (0)

300 Samfunnsvitenskap, sosiologi og antropologi (0)
310 Statistikk (0)
320 Statsvitenskap (0)
330 Økonomi (0)
340 Rettsvitenskap (0)
350 Offentlig administrasjon og militærvesen (0)
360 Sosiale problemer og sosiale tjenester (0)
370 Utdanning og pedagogikk (0)
380 Handel, kommunikasjon og samferdsel (0)
390 Skikker, etikette og folkeminne (3)

390 Skikker, etikette og folkeminne (0)
391 Klesdrakt og personlig utseende (0)
392 Skikker knyttet til livssyklus og familieliv (0)
393 Skikker knyttet til dødsfall (0)
394 Generelle samfunnsskikker (0)
395 Etikette (Manerer) (0)
[396] Ubenyttet (0)
[397] Ubenyttet (0)
398 Folkeminne (3)
399 Skikker knyttet til krig og diplomati (0)

Folkeminne

#	Tittel	Forfatter	Medietype	Utgivelsesår	Språk
1	Àwàhustàn kò	[gjenfortalt av] Dawn Casey ; [illustr. av] Jago ; [overs. av] Dayo Okunlola	Bok	2006	joruba
2	Hansel àti Gretel	[Jakob Ludwig og Wilhelm Grimm] ; [gjenfortalt av] Manju Gregory ; [illustr. av] Jago ; [overs. av] Abimbola Alao	Bok	2005	joruba
3	Adipa kékeré àti èso àlìkámà	[gjenfortalt av] L.R. Hen ; [illustr. av] Jago ; [overs. av] Abimbola Alao	Bok	2005	engelsk

Linked Data KOS: outside of libraries

- Controlled vocabularies in search
 - Relationships between keywords
 - Multilingual access
 - Broaden searches with other terms connected to classes
 - Contextualize search: keywords associated to different disciplines
- Connect events, art, music, places, documentaries, you name it.. to library documents

Thanks!

<http://www.w3.org/2005/Incubator/ld/>

<http://www.dewey.info/>

<http://www.nb.no/webdewey/>

