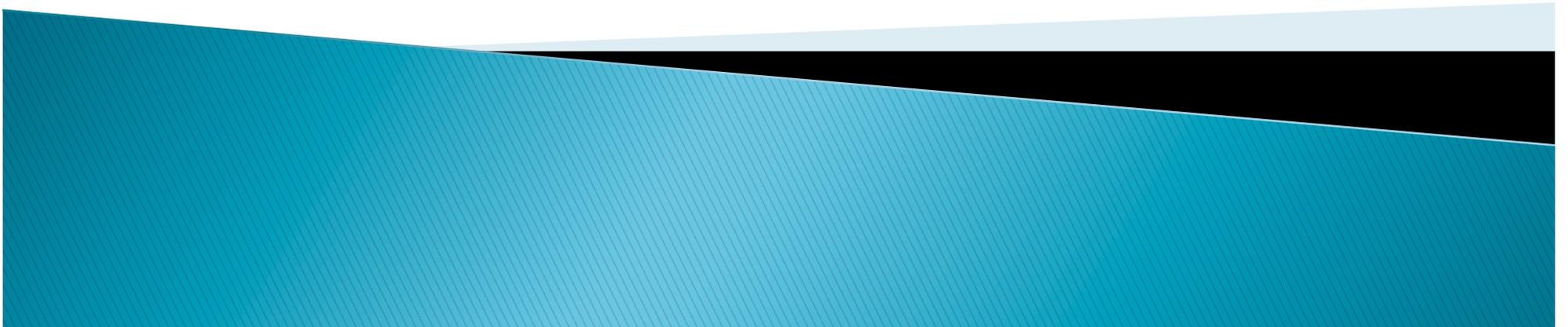


Combine the Web of Data and the Web of Documents

Part 1: RDFa

ISWC 2010, Shanghai, 8th November, 2010

Ivan Herman (郝易文), W3C



What is RDFa?

- ▶ For RDF people, it *sounds* very simple:
 - RDFa is a serialization of RDF embedded in XHTML, HTML, or XML in general

So why bother? Why should we care?
Why is that of any importance?

RDFa may become the single biggest source of RDF triples on the Web after direct database access!

Data for a Web of Data

- ▶ Apart from relational databases, most of the data on the Web are in... (X)HTML content
- ▶ New content is generated every day
- ▶ How would one get structured data from that information?

Authors of the “traditional Web” ...

- ▶ Do *not* generate RDF/XML files separately
 - RDF/XML is complex
 - it requires a separate storage, generation, etc mechanism
 - that is also valid for, e.g., Turtle
 - even when authoring with, say, Emacs, creating an extra file is a load

Solution

- ▶ Add extra structured content to the (X)HTML pages
- ▶ Let processors extract those and turn into RDF

Existing approaches

▶ Microformats

- reuses HTML attributes like @class, @title
- separate vocabularies (address, CV, ...)
- difficult to mix microformats (no concept of namespaces)
- possible to transform via, e.g., XSLT + GRDDL, but all transformations are vocabulary dependent

Existing approaches

- ▶ **Microdata**
 - adds new attributes to HTML5 to express metadata
 - can use URI-s, it also fixes some vocabulary mappings (e.g., to Dublin Core elements)
 - has no notion of datatypes, namespaces
 - generic processing becomes possible to generate RDF

Existing approaches

▶ RDFa

- adds new (X)HTML/XML attributes
- has namespaces and URIs at its core; i.e., mixing vocabulary is just as easy as in RDF
- complete flexibility for using Literals or URI Resources
- *is a complete serialization of RDF*
- generic processing becomes possible to generate RDF

RDFa is a complete bridge between the
Web of Documents and the Web of Data

Therefore...

- ▶ It is very important for RDF experts to
 - know RDFa
 - parse it alongside Turtle, RDF/XML or other
 - when appropriate, generate RDFa pages

What does RDFa look like ?

Main principles of RDFa

- ▶ RDFa means “*RDF in attributes*”. I.e:
 - all RDF contents are defined through XML attributes (no elements)
 - the XML/HTML *tree structure* is used
 - many of the attributes are defined by RDFa
 - some attributes (@href, @rel) are also reused
 - if possible, the text content is also reused (for literals) as well as @href values

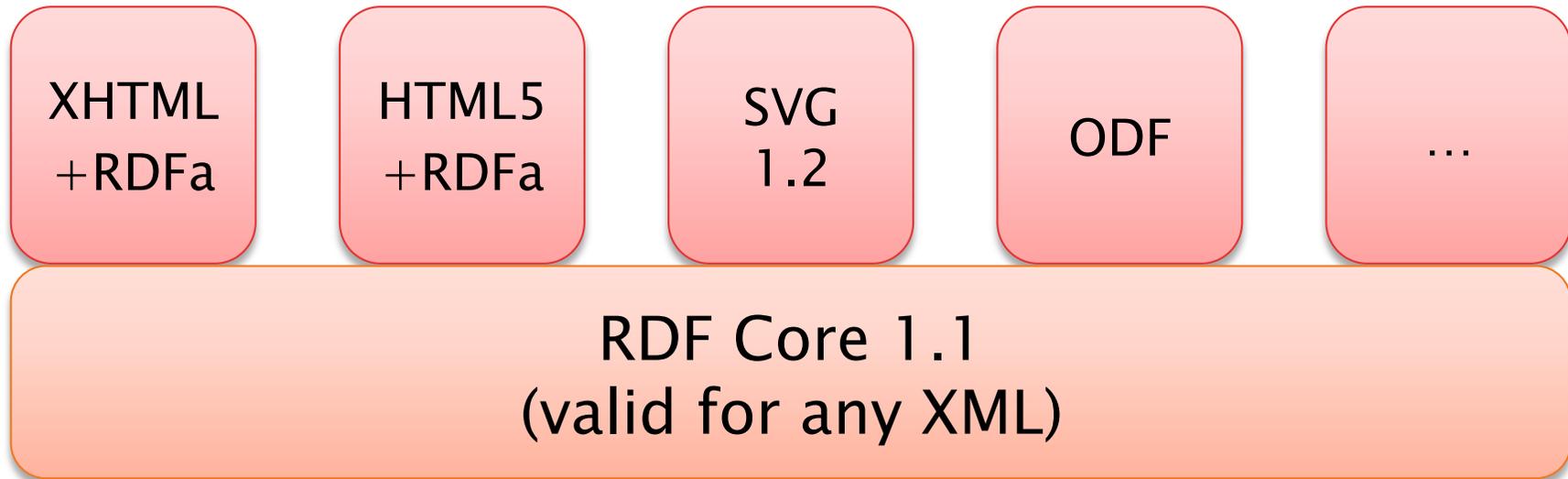
What does this mean in practice?

- ▶ The same (X)HTML file:
 - is used, unchanged, by browsers
 - they ignore attributes they do not know
 - can be used by specialized processors (or APIs) to extract RDF triples

Before getting into details...

- ▶ The current Recommendation is RDFa 1.0
- ▶ There is an RDFa1.1 in the making, almost ready
- ▶ *I will talk about RDFa1.1* and warn when the feature is not available in RDFa1.0

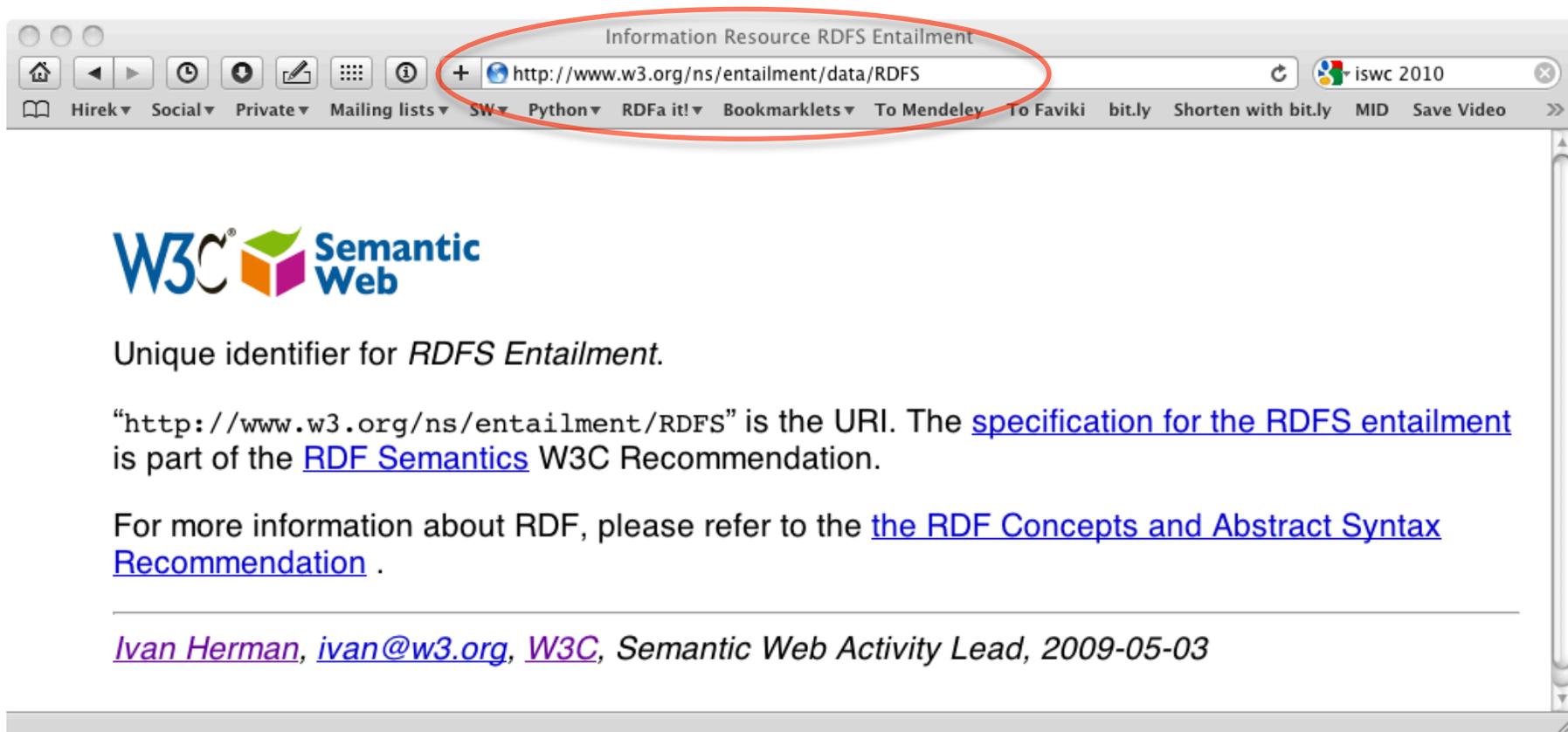
XML or (X)HTML?



- ▶ Formally:
 - RDFa WG defines Core and XHTML
 - HTML WG defines HTML5
- ▶ this tutorial uses XHTML examples

A typical usage pattern

- ▶ A browser usually asks for an HTML content:



A typical usage pattern

- ▶ Via content negotiations this goes to:



Information Resource RDFS Entailment

http://www.w3.org/ns/entailment/data/RDFS.html

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W3C[®] Semantic Web

Unique identifier for *RDFS Entailment*.

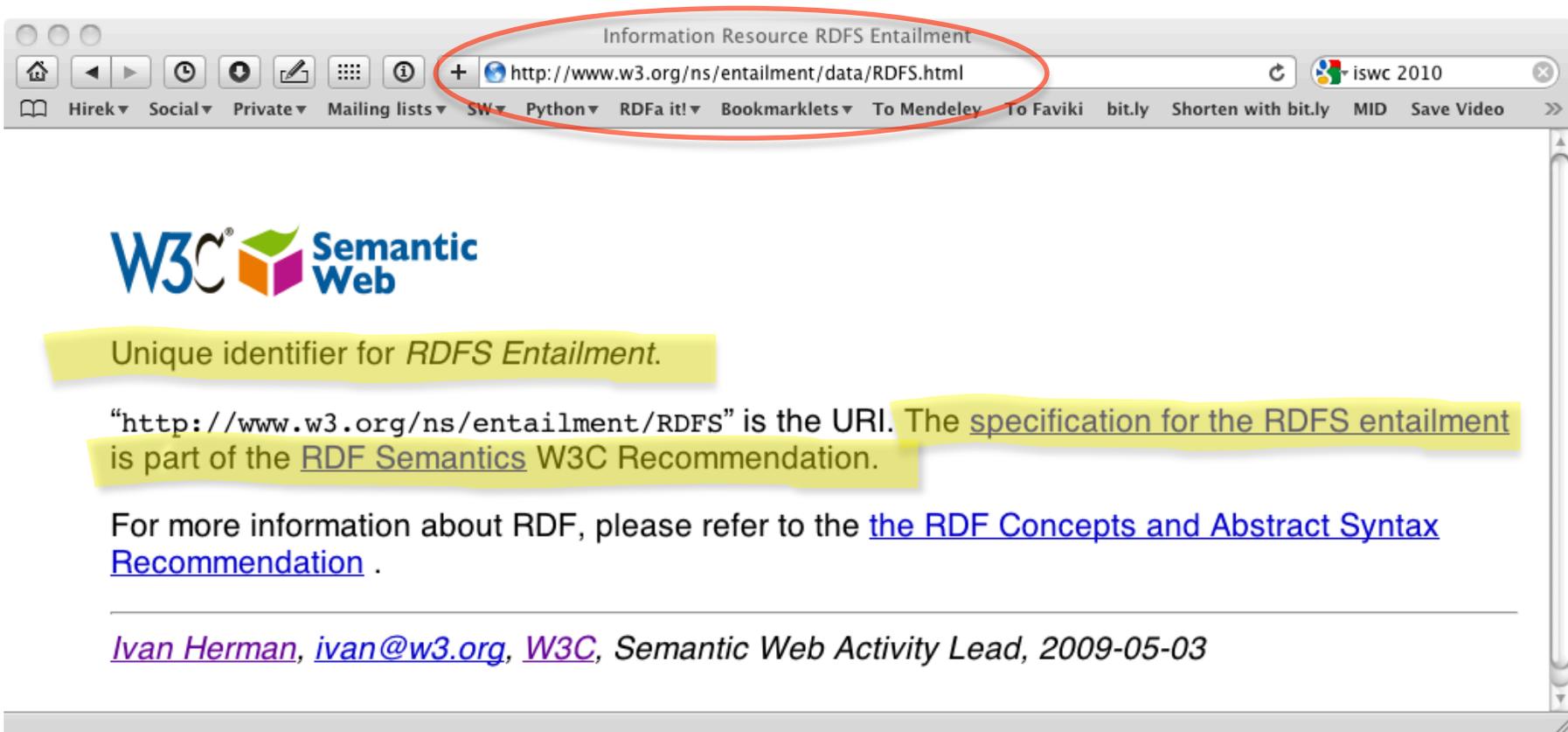
“<http://www.w3.org/ns/entailment/RDFS>” is the URI. The [specification for the RDFS entailment](#) is part of the [RDF Semantics](#) W3C Recommendation.

For more information about RDF, please refer to the [the RDF Concepts and Abstract Syntax Recommendation](#) .

Ivan Herman, ivan@w3.org, [W3C](#), Semantic Web Activity Lead, 2009-05-03

A typical usage pattern

- ▶ Via content negotiations this goes to:



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W3C[®] Semantic Web

Unique identifier for *RDFS Entailment*.

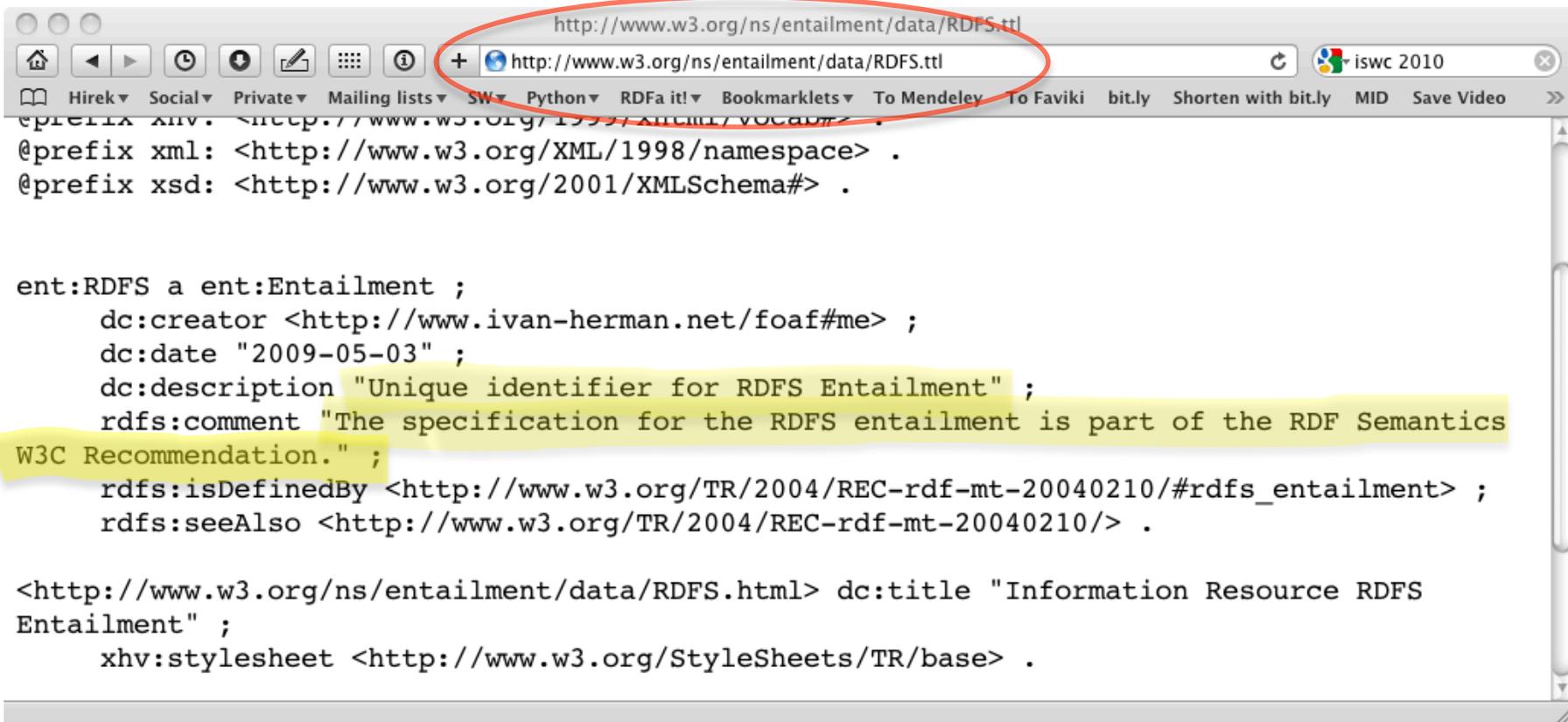
“<http://www.w3.org/ns/entailment/RDFS>” is the URI. The specification for the RDFS entailment is part of the [RDF Semantics W3C Recommendation](#).

For more information about RDF, please refer to the [the RDF Concepts and Abstract Syntax Recommendation](#) .

Ivan Herman, ivan@w3.org, [W3C](#), Semantic Web Activity Lead, 2009-05-03

A typical usage pattern

- ▶ But a client could ask for, say, Turtle:



```
http://www.w3.org/ns/entailment/data/RDFS.ttl
http://www.w3.org/ns/entailment/data/RDFS.ttl
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

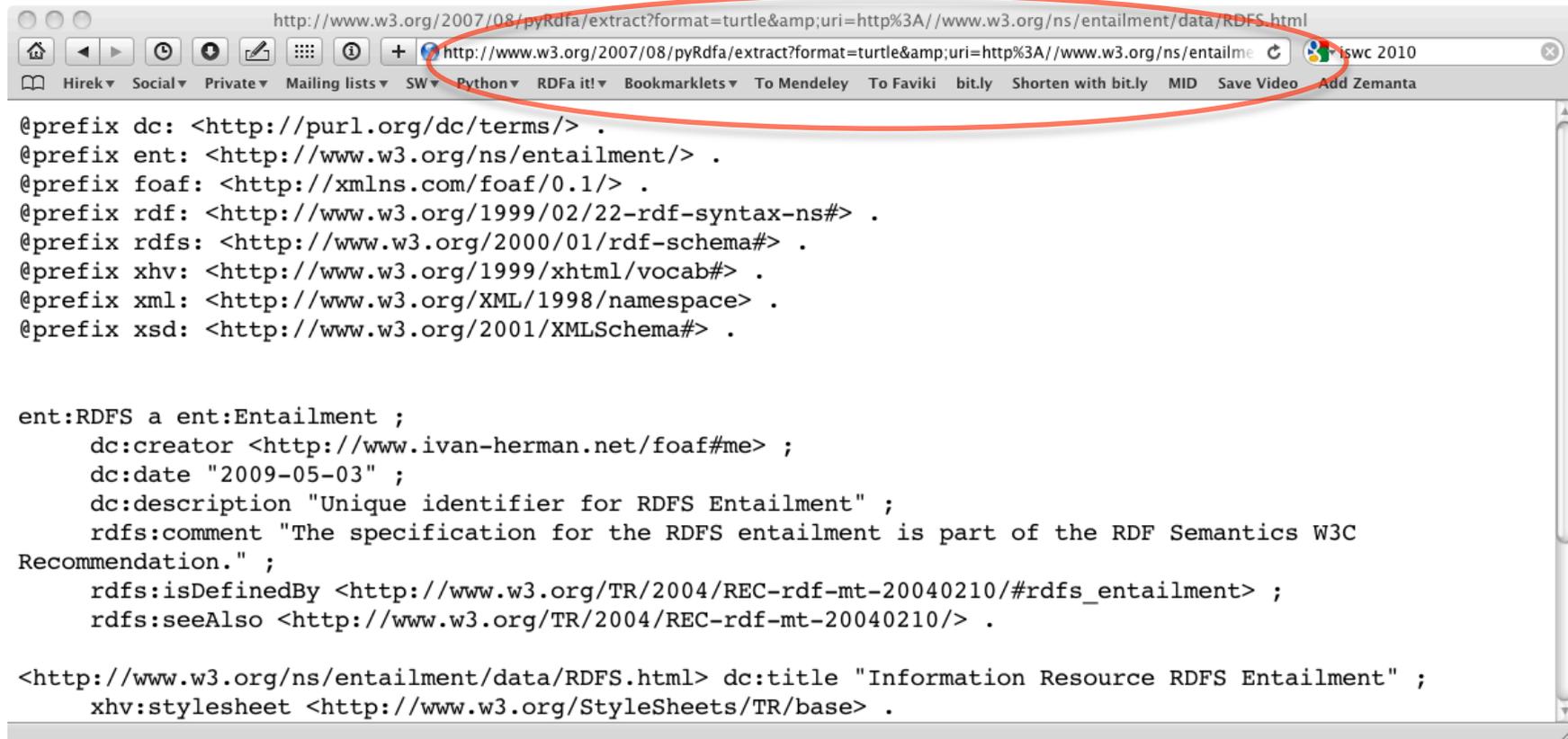
ent:RDFS a ent:Entailment ;
  dc:creator <http://www.ivan-herman.net/foaf#me> ;
  dc:date "2009-05-03" ;
  dc:description "Unique identifier for RDFS Entailment" ;
  rdfs:comment "The specification for the RDFS entailment is part of the RDF Semantics
W3C Recommendation." ;
  rdfs:isDefinedBy <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/#rdfs_entailment> ;
  rdfs:seeAlso <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> .

<http://www.w3.org/ns/entailment/data/RDFS.html> dc:title "Information Resource RDFS
Entailment" ;
  xhv:stylesheet <http://www.w3.org/StyleSheets/TR/base> .
```

Where does the Turtle content come from?

- ▶ The triples are embedded in the HTML file
 - a client may know how to extract RDF triples directly from that file; or
 - an online “distiller” service is used; or
 - the server is set up to generate the Turtle file automatically

For example, use an online service...



```
http://www.w3.org/2007/08/pyRdfa/extract?format=turtle&uri=http%3A//www.w3.org/ns/entailment/data/RDFS.html
http://www.w3.org/2007/08/pyRdfa/extract?format=turtle&uri=http%3A//www.w3.org/ns/entailme
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@prefix dc: <http://purl.org/dc/terms/> .
@prefix ent: <http://www.w3.org/ns/entailment/> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xhv: <http://www.w3.org/1999/xhtml/vocab#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

ent:RDFS a ent:Entailment ;
  dc:creator <http://www.ivan-herman.net/foaf#me> ;
  dc:date "2009-05-03" ;
  dc:description "Unique identifier for RDFS Entailment" ;
  rdfs:comment "The specification for the RDFS entailment is part of the RDF Semantics W3C Recommendation." ;
  rdfs:isDefinedBy <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/#rdfs_entailment> ;
  rdfs:seeAlso <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> .

<http://www.w3.org/ns/entailment/data/RDFS.html> dc:title "Information Resource RDFS Entailment" ;
  xhv:stylesheet <http://www.w3.org/StyleSheets/TR/base> .
```

... or set up the server...

```
RewriteEngine On
```

```
RewriteBase /ns/entailment/data/
```

```
RewriteRule RDFS.ttl
```

```
    /2007/08/pyRdfa/extract?format=turtle&
```

```
    uri=http://www.w3.org/ns/entailment/data/RDFS.html [L]
```

The important point: the *content* is
created only once

Enough talk; how does it work?

Information Resource RDFS Entailment

http://www.w3.org/ns/entailment/data/RDFS.html

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Ivan Herman, ivan@w3.org, [W3C](#), Semantic Web Activity Lead, 2009-05-03

The source and generated RDF...

```
<p about="http://www.w3.org/ns/entailment/RDFS"  
  property="http://purl.org/dc/terms/description">  
  Unique identifier for RDFS Entailment.</p>
```

The source and generated RDF...

```
<p about="http://www.w3.org/ns/entailment/RDFS"  
  property="http://purl.org/dc/terms/description">  
  Unique identifier for <em>RDFS Entailment</em>.</p>
```

```
<http://www.w3.org/ns/entailment/RDFS>
```

```
... .
```

The source and generated RDF...

```
<p about="http://www.w3.org/ns/entailment/RDFS"  
  property="http://purl.org/dc/terms/description">  
  Unique identifier for RDFS Entailment.</p>
```

```
<http://www.w3.org/ns/entailment/RDFS>  
  <http://purl.org/dc/terms/description>  
  ... .
```

The source and generated RDF...

```
<p about="http://www.w3.org/ns/entailment/RDFS"  
  property="http://purl.org/dc/terms/description">  
  Unique identifier for RDFS Entailment.</p>
```

```
<http://www.w3.org/ns/entailment/RDFS>  
  <http://purl.org/dc/terms/description>  
    "Unique identifier for RDFS Entailment." .
```

Information Resource RDFS Entailment

http://www.w3.org/ns/entailment/data/RDFS.html

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[Ivan Herman](#), ivan@w3.org, [W3C](#), Semantic Web Activity Lead, 2009-05-03

The source and generated RDF...

```
<a about="http://www.w3.org/ns/entailment/RDFS"  
  rel="http://www.w3.org/2000/01/rdf-schema#seeAlso"  
  href="http://www.w3.org/TR/2004/REC-rdf-mt-20040210/">  
  RDF Semantics.  
</a>
```

The source and generated RDF...

```
<a about='http://www.w3.org/ns/entailment/RDFS'  
  rel="http://www.w3.org/2000/01/rdf-schema#seeAlso"  
  href="http://www.w3.org/TR/2004/REC-rdf-mt-20040210/">  
  RDF Semantics.  
</a>
```

```
<http://www.w3.org/ns/entailment/RDFS>
```

...

The source and generated RDF...

```
<a about="http://www.w3.org/ns/entailment/RDFS"  
  rel="http://www.w3.org/2000/01/rdf-schema#seeAlso"  
  href="http://www.w3.org/TR/2004/REC-rdf-mt-20040210/">  
  RDF Semantics.  
</a>
```

```
<http://www.w3.org/ns/entailment/RDFS>  
  <http://www.w3.org/2000/01/rdf-schema#seeAlso>  
  ... .
```

The source and generated RDF...

```
<a about="http://www.w3.org/ns/entailment/RDFS"  
  rel="http://www.w3.org/2000/01/rdf-schema#seeAlso"  
  href="http://www.w3.org/TR/2004/REC-rdf-mt-20040210/">  
  RDF Semantics.  
</a>
```

```
<http://www.w3.org/ns/entailment/RDFS>  
  <http://www.w3.org/2000/01/rdf-schema#seeAlso>  
    <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> .
```

Is that it?

What we have is... Ntriples in HTML

- ▶ The combination of @about with @rel/ @property and possibly @href covers most of we need...
- ▶ But this is too complex for authors

Just compare

```
<http://www.w3.org/ns/entailment/RDFS>  
  <http://purl.org/dc/terms/description>  
    "Unique identifier for RDFS Entailment." .  
<http://www.w3.org/ns/entailment/RDFS>  
  <http://www.w3.org/2000/01/rdf-schema#seeAlso>  
    <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> .
```

▶ with

```
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .  
@prefix dc: <http://purl.org/dc/terms/> .  
  
<http://www.w3.org/ns/entailment/RDFS>  
  rdfs:seeAlso  
    <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> ;  
  dc:description "Unique identifier for RDFS Entailment." .
```

The “Turtle” aspects of RDFa

- ▶ Use compact URI-s when possible
- ▶ Make use of XML structure for
 - shared subjects
 - shared predicates
 - create blank nodes
 - ...

Compact URIs (“CURIE”s)

- ▶ Just like in Turtle:
 - define a prefix via @prefix
 - use prefix:reference to abbreviate a URI

CURIE definition and usage

```
<html>
...
<p about="http://www.w3.org/ns/entailment/RDFS"
  property="http://purl.org/dc/terms/description">
  Unique identifier for <em>RDFS Entailment</em>.</p>
...
</html>
```

- ▶ can be replaced by:

```
<html prefix="dc: http://purl.org/dc/terms/">
...
<p about="http://www.w3.org/ns/entailment/RDFS"
  property="dc:description">
  Unique identifier for <em>RDFS Entailment</em>.</p>
...
</html>
```

Some details on @prefix

- ▶ Can be anywhere in the XML tree and is valid for the whole sub-tree
 - i.e., the html element is not the only place to have it
- ▶ The same @prefix attribute can hold several definitions:
 - `prefix="dc: http://purl.org... rdfs: http://..."`

Some details on @prefix

- ▶ An alternative (deprecated) syntax is
 - `xmlns:dc="http://purl.org/dc/terms/"`
- ▶ CURIEs and “real” URIs can be mixed
 - if an attribute value can be interpreted as a CURIE, fine
 - alternatively, it is considered as a URI
- ▶ CURIEs can be used on RDFa attributes only!
 - e.g., not for `@href`

RDFa 1.0 Warnings on CURIEs

- ▶ In RDFa 1.0
 - only the `xslt:XXX` syntax is usable
 - CURIEs on `@about` can only be used with the syntax: `about="[pref:ref]"`
 - Only CURIEs can be used on, e.g., `@property` or `@rel` (no fallback on URIs)

Sharing subjects

- ▶ The basic principle: @about is inherited by children nodes
 - i.e., no reason to repeat it

Shared subject example

```
<html prefix="dc: http://purl.org/dc/terms/  
        rdfs: http://www.w3.org/2000/01/rdf-schema#">  
...  
<body about="http://www.w3.org/ns/entailment/RDFS">  
...  
<p property="dc:description">  
  Unique identifier for <em>RDFS Entailment</em>.</p>  
<p>...<a rel="rdfs:seeAlso"  
  href="http://www.w3.org/TR/2004/REC-rdf-mt-20040210">  
  RDFS Semantics</a>...</p>
```

... yielding

```
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .  
@prefix dc: <http://purl.org/dc/terms/> .  
  
<http://www.w3.org/ns/entailment/RDFS>  
  rdfs:seeAlso  
    <http://www.w3.org/TR/2004/REC-rdf-mt-20040210/> ;  
  dc:description "Unique identifier for RDFS Entailment." .
```

Intricacies of literals

Date examples

```
<body about=".." prefix="dc: http://..."  
  <address>  
    <p property="dc:date">2010-07-05</p>  
  </address>  
</body>
```

- ▶ This leads to:

```
@prefix dc: <http://...>  
<..> dc:date "2010-07-05" .
```

Datatypes

```
<body about=".." prefix="dc: http://... xsd: http://..."  
  <address>  
    <p property="dc:date" datatype="xsd:date">2010-07-05</p>  
  </address>  
</body>
```

- ▶ This leads to:

```
@prefix dc: <http://...>  
@prefix xsd: <http://...>  
<..> dc:date "2010-07-05"^^xsd:date .
```

Controlling the literal

- ▶ The basic rule says: the (RDF) Literal is the enclosed text from the HTML content
- ▶ This is fine in 80% of the cases, but...
- ▶ It may not be natural in all cases! E.g.,
 - 2010-07-05 is the “official” ISO format (for xsd:date)
 - but “July 5, 2010” looks much more natural for a human...

Usage of @content

```
<body about=".." prefix="dc: http://... xsd: http://..."  
  <address>  
    <p property="dc:date" datatype="xsd:date"  
      content="2010-07-05">July 5, 2010</p>  
  </address>  
</body>
```

- ▶ Also leads to:

```
@prefix dc: <http://...>  
@prefix xsd: <http://...>  
<..> dc:date "2010-07-05"^^xsd:date .
```

Subjects, and objects, and subjects
again...

The rules until now

- ▶ What we said is:
 - @about sets the subject
 - @href sets the object
- ▶ But that is not always good enough
 - we do not always want active links (i.e., the "a" element)
 - what about other links in HTML?

@src also sets the object

```
<body about="...">  
  ......  
</body>
```

▶ yields:

```
<...> foaf:depiction <http://www.ex.org/img.png> .
```

We may not always want links...

- ▶ The RDFa `@resource` attribute is equivalent to `@href`
 - it sets the object, just like `@href`
 - but it is ignored by a browser, i.e., not a link!
 - e.g.,:

```
<span about="http://www.ivan-herman.net/foaf#me">  
  <span rel="rdfs:seeAlso"  
    resource="http://www.ivan-herman.net/foaf">  
    Activity Lead</span>  
</span>
```

“Chaining”

- ▶ Here is what we would like to have in RDFa

```
<http://www.w3.org/ns/entailment/RDFS>  
  dc:creator <http://www.ivan-herman.net/foaf#me> .
```

```
<http://www.ivan-herman.net/foaf#me>  
  foaf:mailbox <mailto:ivan@w3.org> ;  
  foaf:workplaceHomepage <http://www.w3.org> .
```

“Chaining”

- ▶ A straightforward way:

```
<body about="http://www.w3.org/ns/entailment/RDFS">
...
<address>
  <span rel="dc:creator"
    resource="http://www.ivan-herman.net/foaf#me"/>
  <span about="http://www.ivan-herman.net/foaf#me">
    <a rel="foaf:mailbox"
      href="mailto:ivan@w3.org">ivan@w3.org</a>,
    <a rel="foaf:workplaceHomepage"
      href="http://www.w3.org">W3C</a>
  </span>
</address>
```

“Chaining”

- ▶ A straightforward way:

```
<body about="http://www.w3.org/ns/entailment/RDFS">
...
<address>
  <span rel="dc:creator"
    resource="http://www.ivan-herman.net/foaf#me"/>
  <span about="http://www.ivan-herman.net/foaf#me">
    <a rel="foaf:mailbox"
      href="mailto:ivan@w3.org">ivan@w3.org</a>,
    <a rel="foaf:workplaceHomepage"
      href="http://www.w3.org">W3C</a>
  </span>
</address>
```

“Chaining”: when objects become subjects...

- ▶ An alternative:

```
<body about="http://www.w3.org/ns/entailment/RDFS">
...
<address>
  <span rel="dc:creator"
    resource="http://www.ivan-herman.net/foaf#me">
    <a rel="foaf:mailbox"
      href="mailto:ivan@w3.org">ivan@w3.org</a>,
    <a rel="foaf:workplaceHomepage"
      href="http://www.w3.org">W3C</a>
  </span>
</address>
```

Chaining means

- ▶ `@resource` (or `@href`) becomes a subject *for the sub-tree*
- ▶ This feature is a bit like in RDF/XML

Some extra features

Some extra features we do not have time for...

- ▶ Blank nodes can be created using “_:XX”
- ▶ Shorthand for rdf types
- ▶ An API has been defined for Web Applications

Some extra features we do not have time for...

- ▶ Prefix declarations can be collected in a separate file and referred to via a @profile attribute
 - the “profile file”
 - **RDFa1.0 warning**: this is an RDFa1.1 feature!

“Term” declarations

- ▶ A profile file can also define a *term*:
 - assign a URI to a simple string
- ▶ The term can be used directly by authors, without prefixes

Term Example

- ▶ Say, file “<http://ex.org/prof>” defines a mapping:
 - “desc” → “<http://purl.org/dc/terms/description>”

Term Example

```
<html prefix="dc: http://purl.org/dc/terms/  
        rdfs: http://www.w3.org/2000/01/rdf-schema#">  
...  
<body profile="http://ex.org/prof.html" about="...">  
...  
<p property="desc">  
    Unique identifier for <em>RDFS Entailment</em>.</p>
```

► yields

```
@prefix dc: <http://purl.org/dc/terms/> .  
  
<...> <http://purl.org/dc/terms/description>  
    "Unique identifier for RDFS Entailment."
```

Terms are important...

- ▶ Usage of CURIEs and URIs is intuitive for RDF people...
- ▶ It is *not* for average HTML authors!
- ▶ Profile files can be published by major publishers:
 - Dublin Core, FOAF, ...
 - FaceBook, Google, ...
- ▶ ... and users can simply refer to the profiles

Typing

- ▶ Typing can of course be done using `@rel="rdf:type"`
- ▶ But that is a widely used combination, so there is a separate `@typeof` attribute for that

Typing example

```
<span about="http://www.ivan-herman.net/foaf#me"  
  typeof="foaf:Person">  
  <span property="foaf:name">Ivan Herman</span>  
</span> ,
```

► yields

```
<http://www.ivan-herman.net/foaf#me> a foaf:Person ;  
  foaf:name "Ivan Herman" .
```

Publishing RDFa

- ▶ RDFa gives an easy way of publishing RDF data on the Web
- ▶ Often, the same RDF data is available in different formats, including RDFa
 - it is up to the client to choose which one to use
 - *Web Applications* would rely on RDFa, though...

LOC example

Semantic Web

From Library of Congress Subject Headings

Details Visualization Suggest Terminology

Semantic Web

URI
<<http://id.loc.gov/authorities/sh2002000569#concept>>

Type
Topical Term

Broader Terms

- > [Semantic integration \(Computer systems\)](#)
- > [Semantic networks \(Information theory\)](#)
- > [World Wide Web](#)

Related Terms

- > [Microformats](#)

Sources

- > Engr. index online, May 6, 2002 (identifier: Semantic Web)
- > ASTI on FirstSearch, May 6, 2002: in titles (semantic Web)
- > Work cat.: 2002070545: The Semantic Web--ISWC 20002, 2002.

LC Classification
TK5105.88815

LOC example

```
Source of http://id.loc.gov/authorities/sh2002000569
<p rel="skos:inScheme" resource="http://id.loc.gov/authorities#topicalTerms">topical
Term</p>
</li>
<li>
  <h3>Broader Terms</h3>
  <ul class="std">
    <li>
      <a href="http://id.loc.gov/authorities/sh2004000479#concept" rel="skos:broader">
        <span property="skos:prefLabel" xml:lang="en">Semantic integration (Computer
systems)</span>
      </a>
    </li>
    <li>
      <a href="http://id.loc.gov/authorities/sh92004914#concept" rel="skos:broader">
        <span property="skos:prefLabel" xml:lang="en">Semantic networks (Information
theory)</span>
      </a>
    </li>
    <li>
      <a href="http://id.loc.gov/authorities/sh95000541#concept" rel="skos:broader">
        <span property="skos:prefLabel" xml:lang="en">World Wide Web</span>
      </a>
    </li>
  </ul>
</li>
```

Consuming RDFa

- ▶ Various search engines begin to consume RDFa
 - Google, Yahoo, ...
 - they may specify which vocabularies they “understand”
 - this is still an evolving area
- ▶ Facebook’s “social graph” is based on RDFa

Google's rich snippet

- ▶ Embedded metadata (microformat or RDFa) is used to improve search result page
 - at the moment only a few vocabularies are recognized, but that will evolve over the years



The screenshot shows a Google search interface. The search bar contains the text "chicken noodle soup recipes". Below the search bar, it says "About 1,150,000 results (0.26 seconds)". The first search result is from "Cooks.com - Recipes - Homemade Chicken Noodle Soup". The second search result is from "Allrecipes.com" and is titled "Grandma's Chicken Noodle Soup Recipe". This result includes a star rating of five stars, 561 reviews, and preparation and cooking times. A red circle highlights the title "Grandma's Chicken Noodle Soup Recipe" and the star rating.

gle chicken noodle soup recipes

About 1,150,000 results (0.26 seconds)

Cooks.com - **Recipes** - **Homemade Chicken Noodle Soup**
Enter your email to signup for the Cooks.com **Recipe** Newsletter. ...
NOODLE SOUP: Put chicken and all seasonings in a ... are soft. ...
www.cooks.com › **Recipes** - **Cached** - **Similar**

tools **Grandma's Chicken Noodle Soup Recipe** - Allrecipes.com
★★★★★ 561 reviews - Prep time: 20 mins - Cook time: 25 mins
This is a **recipe** that was given to me by my grandmother. It is a very ...
and I believe that all will like it.

Effects of, e.g., Google

- ▶ A number of popular sites publish RDFa as part of their normal pages:
 - Tesco, BestBuy, Slideshare, The London Gazette, Newsweek, MSNBC, O'Reilly Catalog, the White House...
 - Creative Commons snippets are in RDFa

BestBuy Example for RDFa Usage

My Account | Order Status | Customer Service | Español

BEST BUY Weekly Ad Store Locator Outlet Center Services Gifts cart Items

TV & VIDEO AUDIO CAR & GPS CAMERAS & CAMCORDERS COMPUTERS MOBILE PHONES & OFFICE MUSIC, MOVIES & BOOKS VIDEO GAMES & GADGETS HOME & APPLIANCES

Search All Categories Keyword or Item # GO Credit Cards Reward Zone*

Best Buy - Carbondale

Print



1270 E Main St
Carbondale, IL 62901
Phone: 618-351-1700
GEO: 37.732719, -89.192314

Customer Reviews:
☆☆☆☆☆
Be the first to write a store review.
Maps & Directions | Weekly Ad

Store Hours
Mon: 10-9; Tue: 10-9; Wed: 10-9; Thurs: 10-9; Fri: 10-9; Sat: 10-9; Sun: 11-7;
4/4 - 4/10, 2010
Mon: 10-9; Tues: 10-9; Wed: 10-9; Thurs: 10-9; Fri: 10-9; Sat: 10-9; Sun: Closed

Events

Avatar Midnight Release!



The biggest movie of 2009 is coming to Best Buy on April 22nd! Carbondale Best Buy is hosting a special midnight release! We will open the doors at 12:00am on 4/22! We'll have door prizes including movie posters available only to those in attendance at the midnight release! Local band "Ravenhill" will be playing, as well! You don't want to miss this special event! Check back for more information as we get closer to the release date!

Local Selections
Check out these special product selections at our store.

Open Box Items (25)

At This Location

- Geek Squad**
Computer setup & services, plus home theater, appliance and car installation.
- Best Buy Mobile**
Get informed advice from noncommissioned mobile phone specialists.
- Small Business Solutions**
Featuring Professional Series products and trained staff to help with small business needs.
- Apple Shop**
Mac, iPod and more at this Apple store-within-a-store.
- Electronics Recycling**
We offer electronics recycling at this and all other U.S. stores.

BestBuy Example for RDFa Usage

My Account | Order Status | Customer Service | Español

BEST BUY Weekly Ad Store Locator Outlet Center Services Gifts cart Items

TV & VIDEO AUDIO CAR & GPS CAMERAS & CAMCORDERS COMPUTERS MOBILE PHONES & OFFICE MUSIC, MOVIES & BOOKS VIDEO GAMES & GADGETS HOME & APPLIANCES

Search [All Categories] <div class="fn n" property="foaf:name rdfs:label vcard:fn gr:legalName"><h1 class="org" property="geo:lat_long" content="37.732719,-89.192314">Best Buy - Carbondale</h1></div>

Best Buy - Carbondale Print



1270 E Main St
Carbondale, IL 62901
Phone: 618-351-1700
GEO: 37.732719, -89.192314

Customer Reviews:
☆☆☆☆☆
Be the first to write a store review.

Store Hours
Mon: 10-9; Tue: 10-9; Wed: 10-9; Thurs: 10-9; Fri: 10-9; Sat: 10-9; Sun: 11-7;

<div class="hours" rel="gr:hasOpeningHoursSpecification"><div typeof="gr:OpeningHoursSpecification" about="#regularhours">Mon: 109</div>

<div class="adr" rel="vcard:adr"><div typeof="vcard:Address"><div class="street-address" property="vcard:street-address">1270 E Main St</div>CarbondaleIL62901</div><div class="tel" property="vcard:tel" class="phone-number">618-351-1700</div><div class="geo" rel="vcard:geo">GEO:37.732719-89.192314</div>

Apple Shop
Mac, iPod and more at this Apple store-within-a-store.

Electronics Recycling
We offer electronics recycling at this and all other U.S. stores.

The biggest movie of 2009 is coming to Best Buy on April 22nd! Carbondale Best Buy is hosting a special midnight release! We will open the doors at 12:00am on 4/22! We'll have door prizes including movie posters available only to those in attendance at the midnight release! Local band "Ravenhill" will be playing, as well! You don't want to miss this special event! Check back for more information as we get closer to the release date!

Effects on BestBuy

- ▶ Reported in a BestBuy blog:
 - GoodRelations+RDFa improved Google rank tremendously
 - 30% increase in traffic on BestBuy store pages
 - Yahoo observers a 15% increase in click-through rate
- ▶ Not bad... 😊

Overstock.com example



Free Shipping on yo

Shop All Department

Online Shopping

Electronics

Cameras & Photo

Camcorders

Digital Camcorders

Photos



View larger



Bell and Howell DV550UW 12MP Digital Video Camera with Underwater Housing

Rating 3.8 ★★★★★ 10 reviews
[Read Reviews](#) / [Write a review](#)

Today: \$68.99

Get 5% Back With Club O
[View Details](#)

Brief Description Item#: 12403958

- Take great videos with the Bell + Howell digital video camera
- Digital video camera has ultra compact body and features a flip-up USB
- Camcorder includes waterproof underwater housing to take video underwater (up to 33 ft)

Sold out!

This product is not in stock.
We will notify you when this product is in stock.
Please enter your email address below, then

Compare to these
[This?](#)

ADORAMA

TigerDirect

People Who View
Viewed



SVP Underwater
5MP Digital Video
Camera

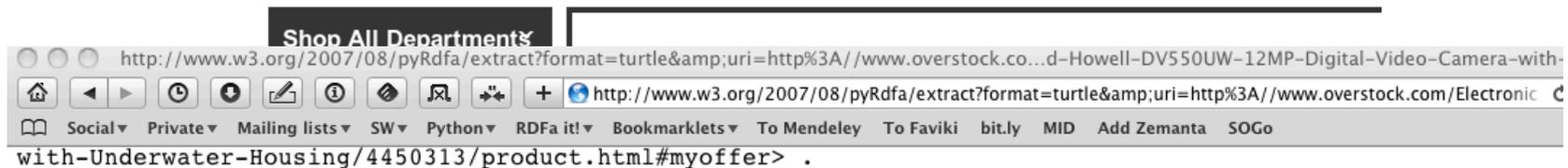
Today: \$75.99

[Review](#)

Overstock.com example



Free Shipping on yo



```
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#myoffer> .  
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#reviews.html> v:count "10" .
```

```
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#myoffer> a gr:Offering ;  
  gr:hasBusinessFunction gr:Sell ;  
  gr:hasPriceSpecification  
    [ gr:hasCurrency "USD"^^xsd:string ;  
      gr:hasCurrencyValue "68.99"^^xsd:float  
    ] .
```

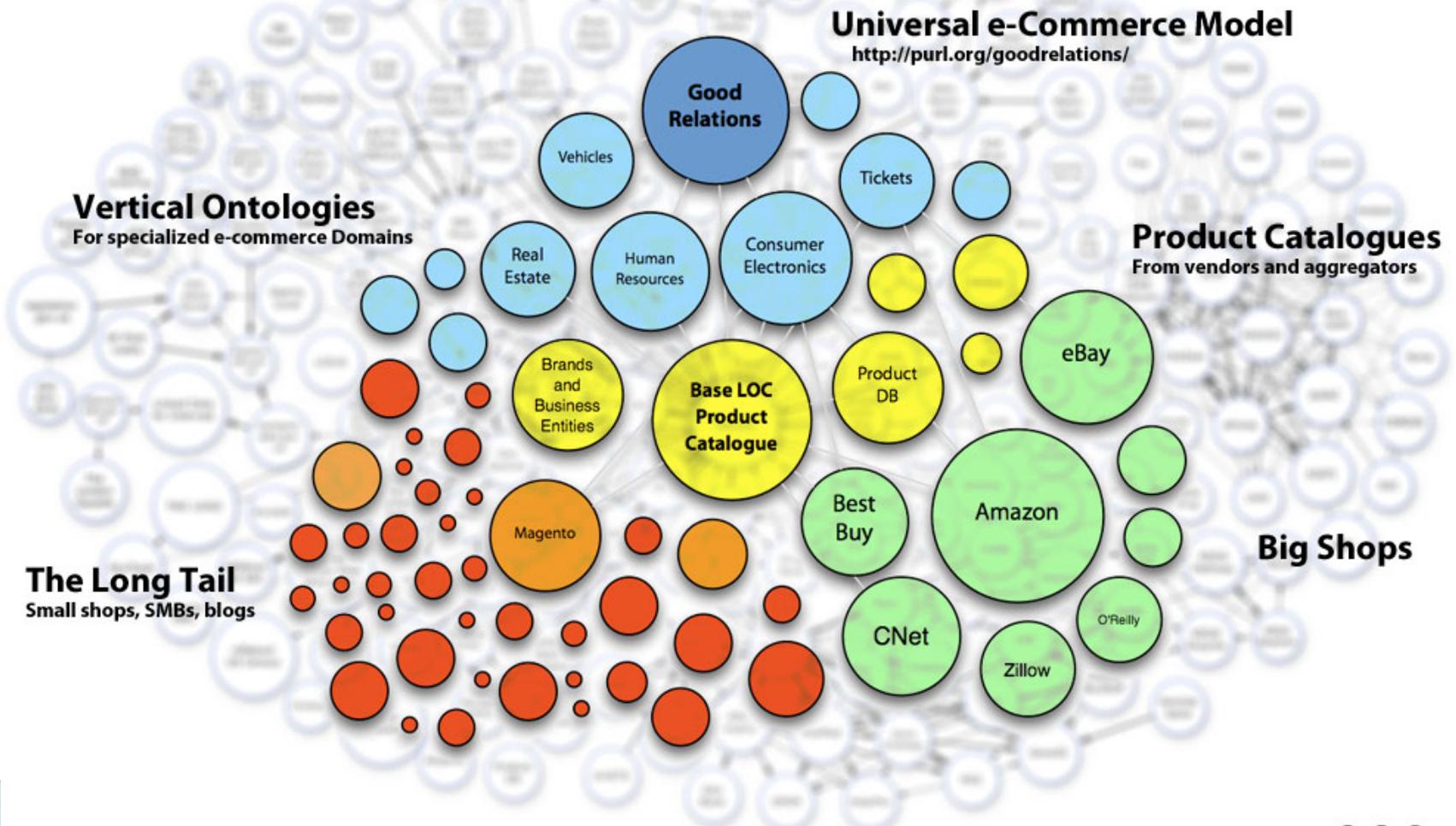
```
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#myoffer> a gr:Offering ;  
  gr:hasBusinessFunction gr:Sell ;  
  gr:hasPriceSpecification  
    [ gr:hasCurrency "USD"^^xsd:string ;  
      gr:hasCurrencyValue "68.99"^^xsd:float  
    ] .
```

```
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#myoffer> a gr:Offering ;  
  gr:hasBusinessFunction gr:Sell ;  
  gr:hasPriceSpecification  
    [ gr:hasCurrency "USD"^^xsd:string ;  
      gr:hasCurrencyValue "68.99"^^xsd:float  
    ] .
```

```
<http://www.overstock.com/Electronics/Bell-and-Howell-DV550UW-12MP-Digital-Video-Camera-with-Underwater-Housing/4450313/product.html#myoffer> a gr:Offering ;  
  gr:hasBusinessFunction gr:Sell ;  
  gr:hasPriceSpecification  
    [ gr:hasCurrency "USD"^^xsd:string ;  
      gr:hasCurrencyValue "68.99"^^xsd:float  
    ] .
```

More general: “linked open commerce”

LINKED **OPEN** COMMERCE

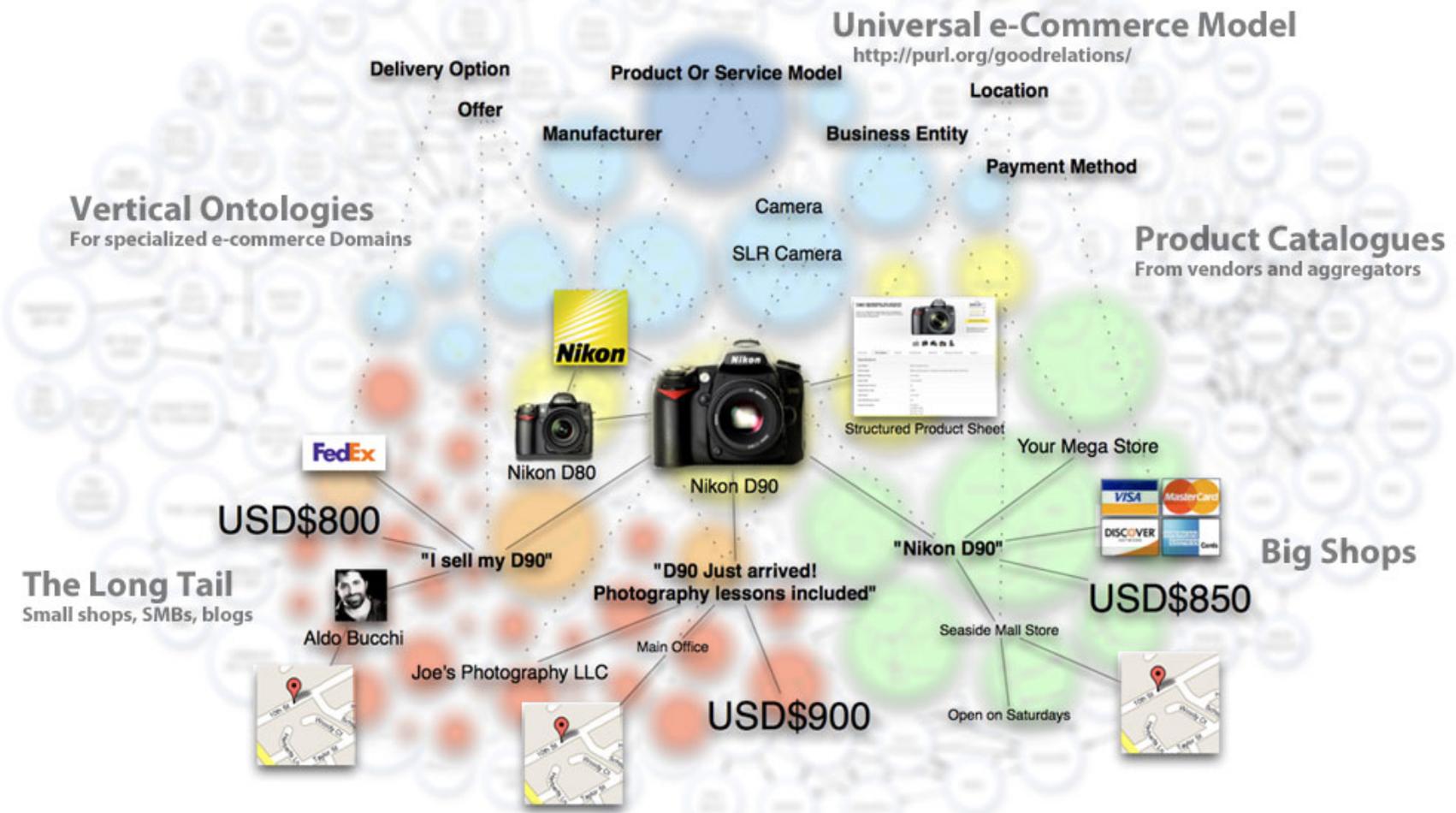


<http://linkedopencommerce.com/>



More general: "linked open commerce"

LINKED **OPEN** COMMERCE



<http://linkedopencommerce.com/>



- ▶ Publishing RDFa is an important step in combining the Semantic Web and the “traditional” Web
- ▶ But publishing is not always straightforward for a lambda Web designer and user
- ▶ This is where the role of Drupal 7 is huge!
 - make the publication of data in RDFa part of the normal CMS operation

So let us see what Drupal 7 can offer!

Thank you for your attention!

These slides are also available on the Web:



<http://www.w3.org/2010/Talks/RDFa-Drupal-Tutorial/RDFa.pdf>