

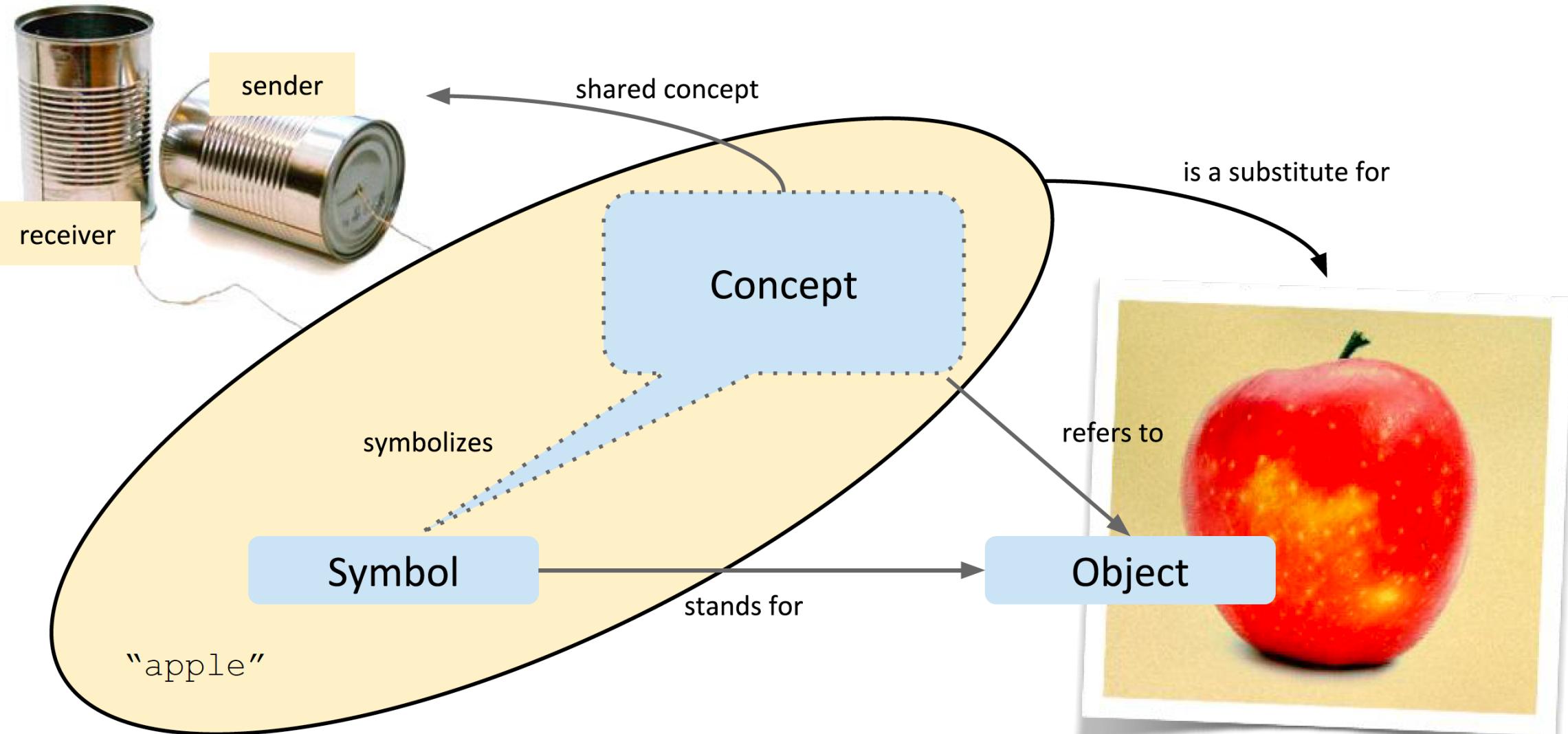
What is this?





*Ceci n'est pas une pomme.*

# Semiotic Triangle



# Rumplestitskin Principle

No. 512

25¢



Knowing someone's, or something's, true name gives the person  
(who knows the true name) power over them...

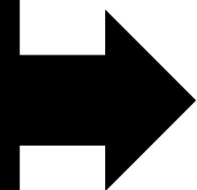
# Uniform Resource Identifier

- A **Uniform Resource Identifier (URI)** defines a simple and extensible schema for worldwide unique identification of abstract or physical resources (RFC 3986).
- A **Resource** can be every object with a clear identity (according to the context of the application)
  - as e.g., web pages, books, locations, persons, relations among objects, abstract concepts, etc.
- URI concept is already established in various domains, as e.g.,
  - the Web (URL),
  - Books and publications (ISBN, ISSN),
  - Digital Object Identifier (DOI)

# URL

identify  
what exists  
on the web

<http://www.mywebsite.org/>

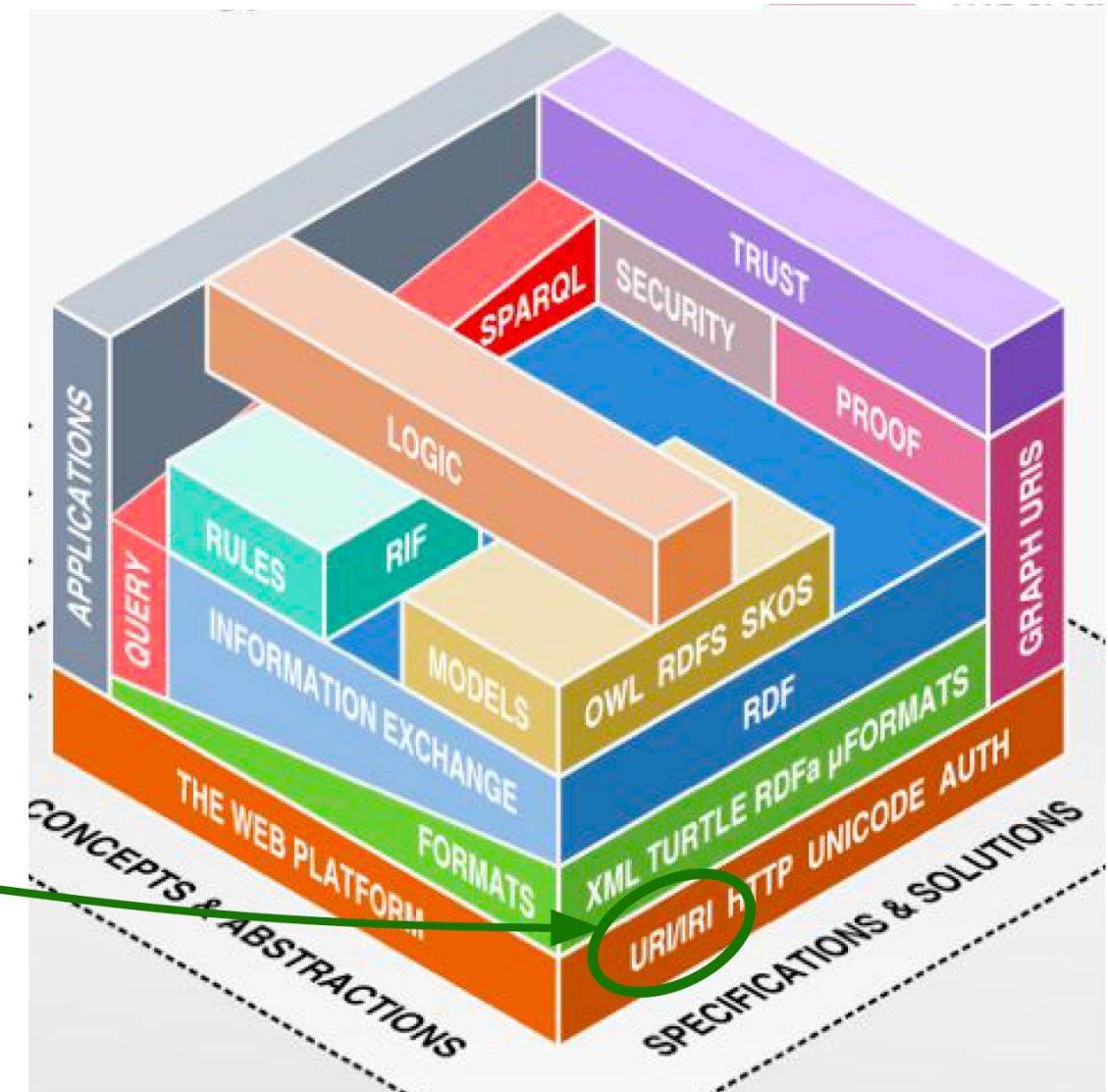
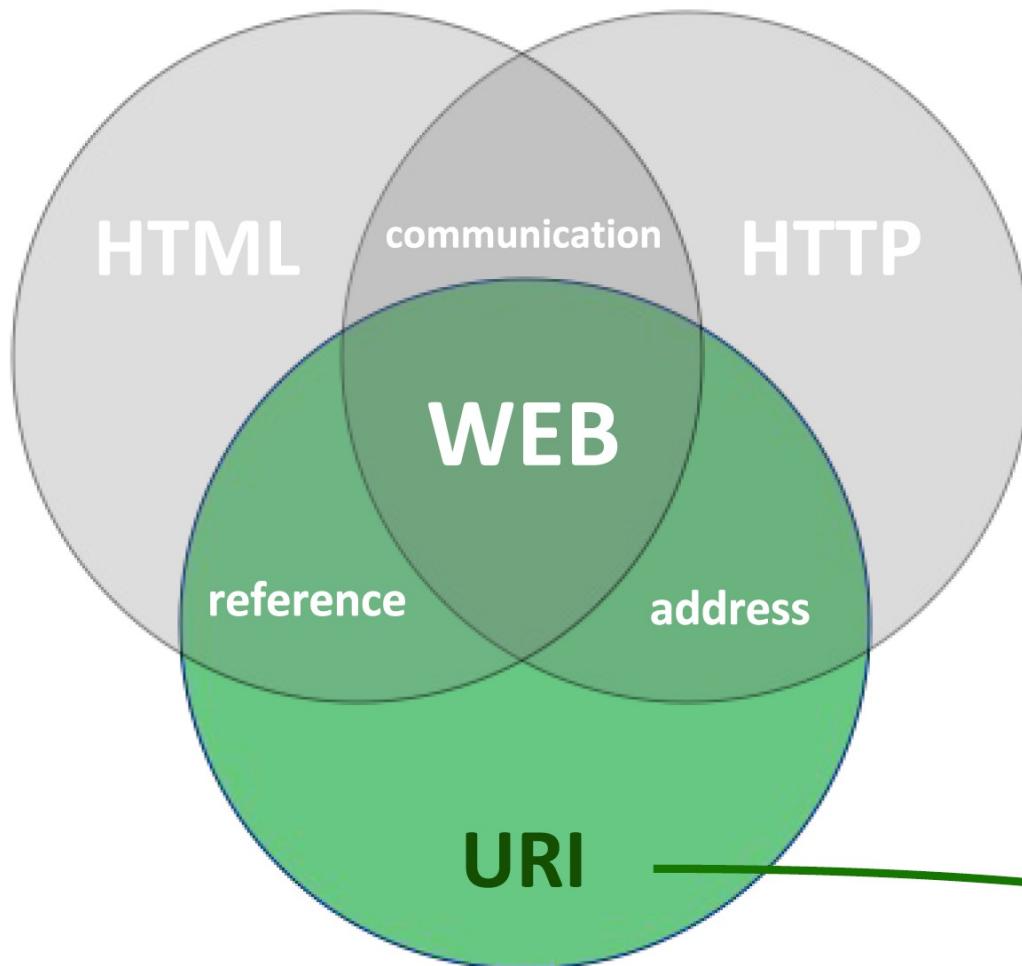


# URI

identify  
on the web  
what exists

[http://hpi.de/harald\\_foaf.rdf#me](http://hpi.de/harald_foaf.rdf#me)

# Linked Data and the Web

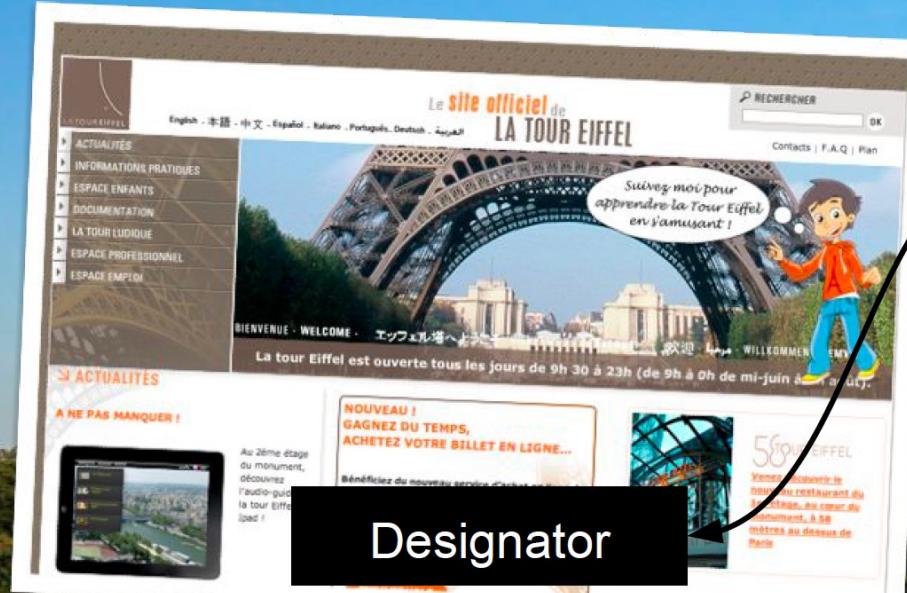


URI

<http://www.tour-eiffel.fr/>

Resource

Presentation



The Eiffel Tower is described (designated) by the web page

identifies

represents (stands for)

Representation

Designatum

describes

Designator

defines

Metadata:

Content-type: text/html

Data:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
  <head>
    <title>Le site officiel de la Tour Eiffel</title>
  ...
</html>
```

# What if a URI does not exist (yet)?



- Define a URI by yourself:
  - **avoid overlaps** → use your own website as namespace
  - enable **documentation at the same place** → HTTP Content Negotiation
- Use **separate URIs** for the **resource (*Designatum*)** and **its documentation (*Designator*)** via
  - HTTP Content Negotiation and/or
  - URI references (e.g. via "#" fragment identifier)

# HTTP Content Negotiation

Let's try an example:

- I want to have **information** about the Eiffel Tower from DBpedia

1

HTTP GET request  
Accept Header: text/html

http://dbpedia.org/ **resource**/Eiffel\_Tower

URI represents *Designatum*



HTTP GET request  
Accept Header: text/html

3

http://dbpedia.org/ **page**/Eiffel\_Tower

URI represents *Designator*

2

HTTP/2 303 See Other

HTML Document

# HTTP Content Negotiation

Let's try another example:

- I want to have machine readable information about the Eiffel Tower from DBpedia

1 **HTTP GET request**  
**Accept Header: application/rdf+xml**

`http://dbpedia.org/ resource/Eiffel_Tower`

URI represents *Designatum*



4 **RDF Document**

**HTTP GET request**  
**Accept Header: application/rdf+xml**

3

`http://dbpedia.org/ data/Eiffel_Tower`

URI represents *Designator*

2 **HTTP/2 303 See Other**

# HTTP Content Negotiation

## Let's try it ourselves:

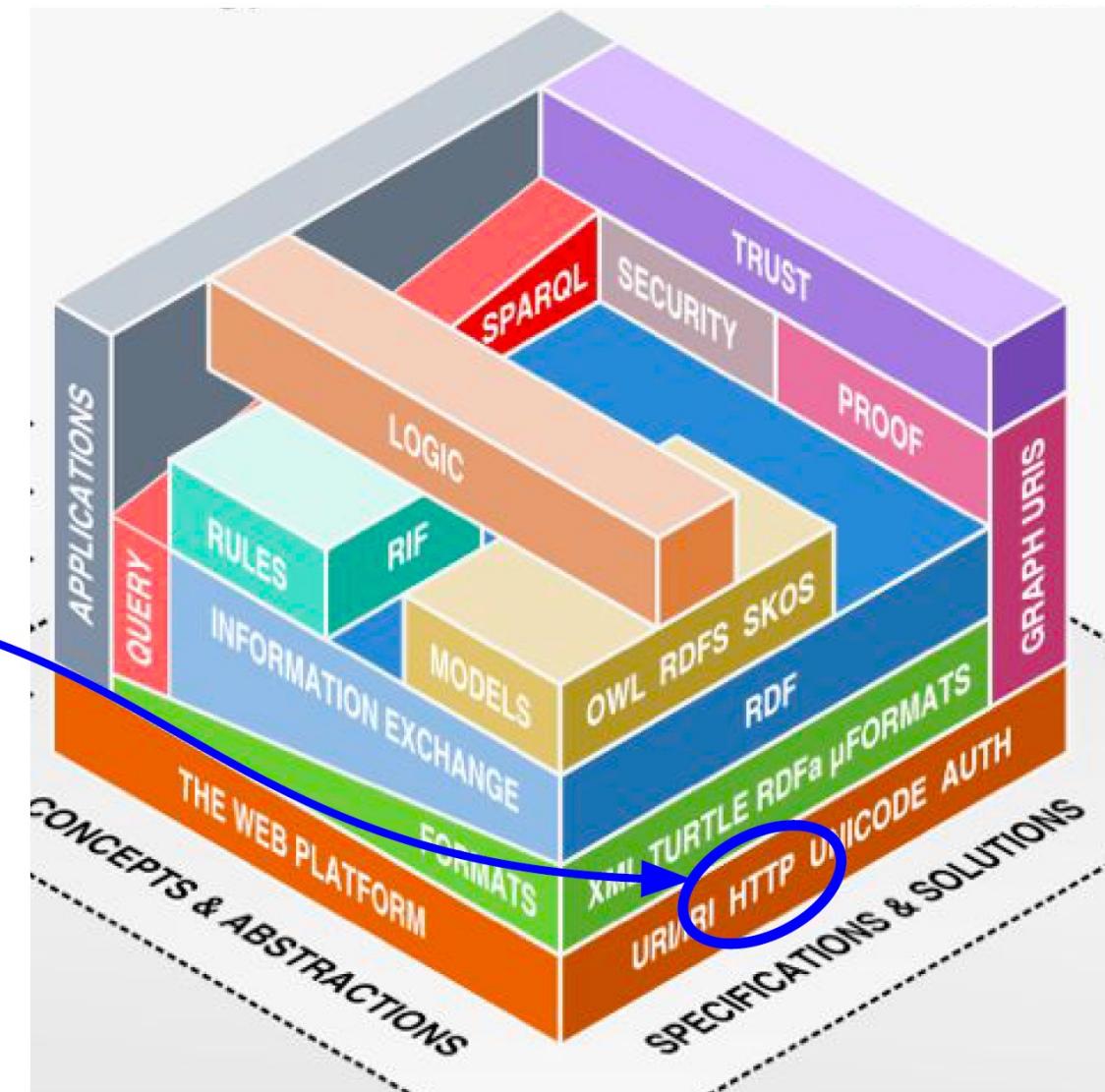
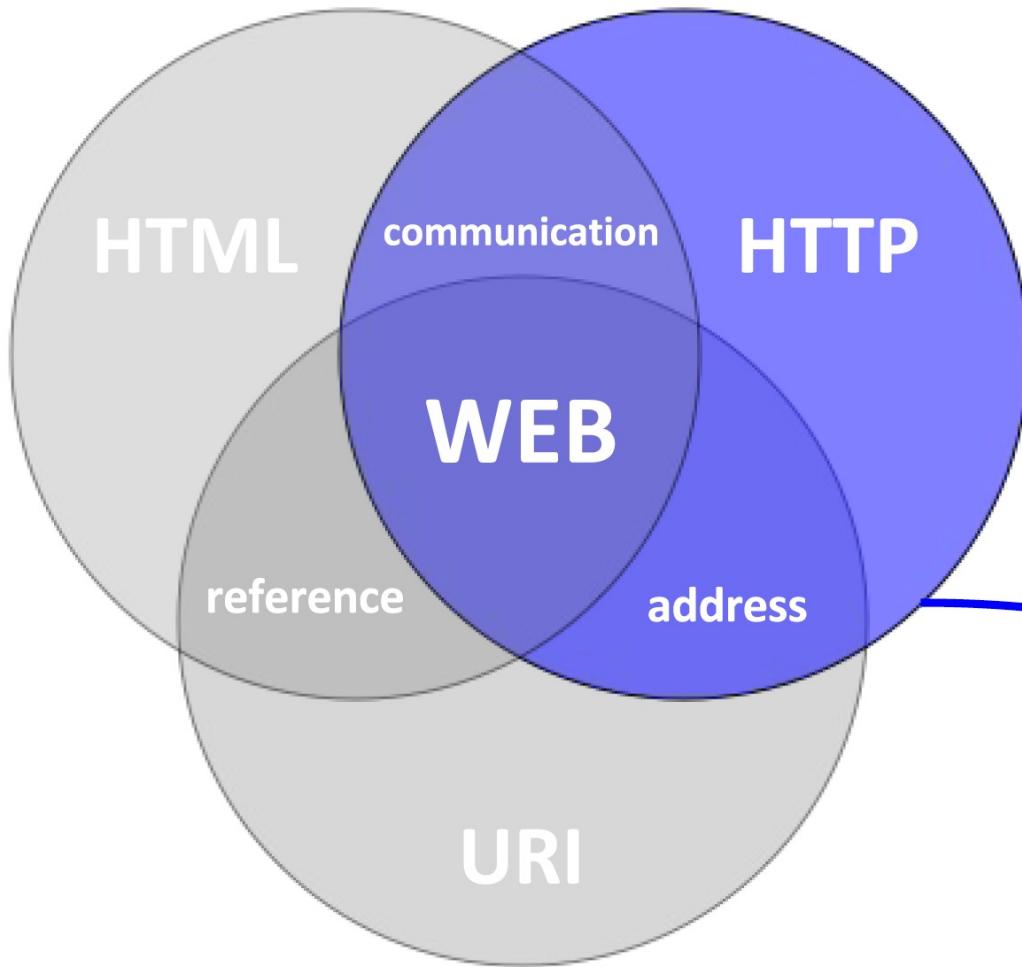
- I want to have **information** about the Eiffel Tower from DBpedia

```
curl -L -H "Accept: text/html" http://dbpedia.org/resource/Eiffel_Tower
```

- I want to have **machine readable information** about the Eiffel Tower from DBpedia

```
curl -L -H "Accept: application/rdf+xml" http://dbpedia.org/resource/Eiffel_Tower
```

# Linked Data and the Web



# Fragment Identifier

Let's try another example:

- I want to have **machine readable information** about myself

[http://hpi.de/harald\\_ foaf.rdf](http://hpi.de/harald_ foaf.rdf)

*Designator*



FOAF Document  
with information about me

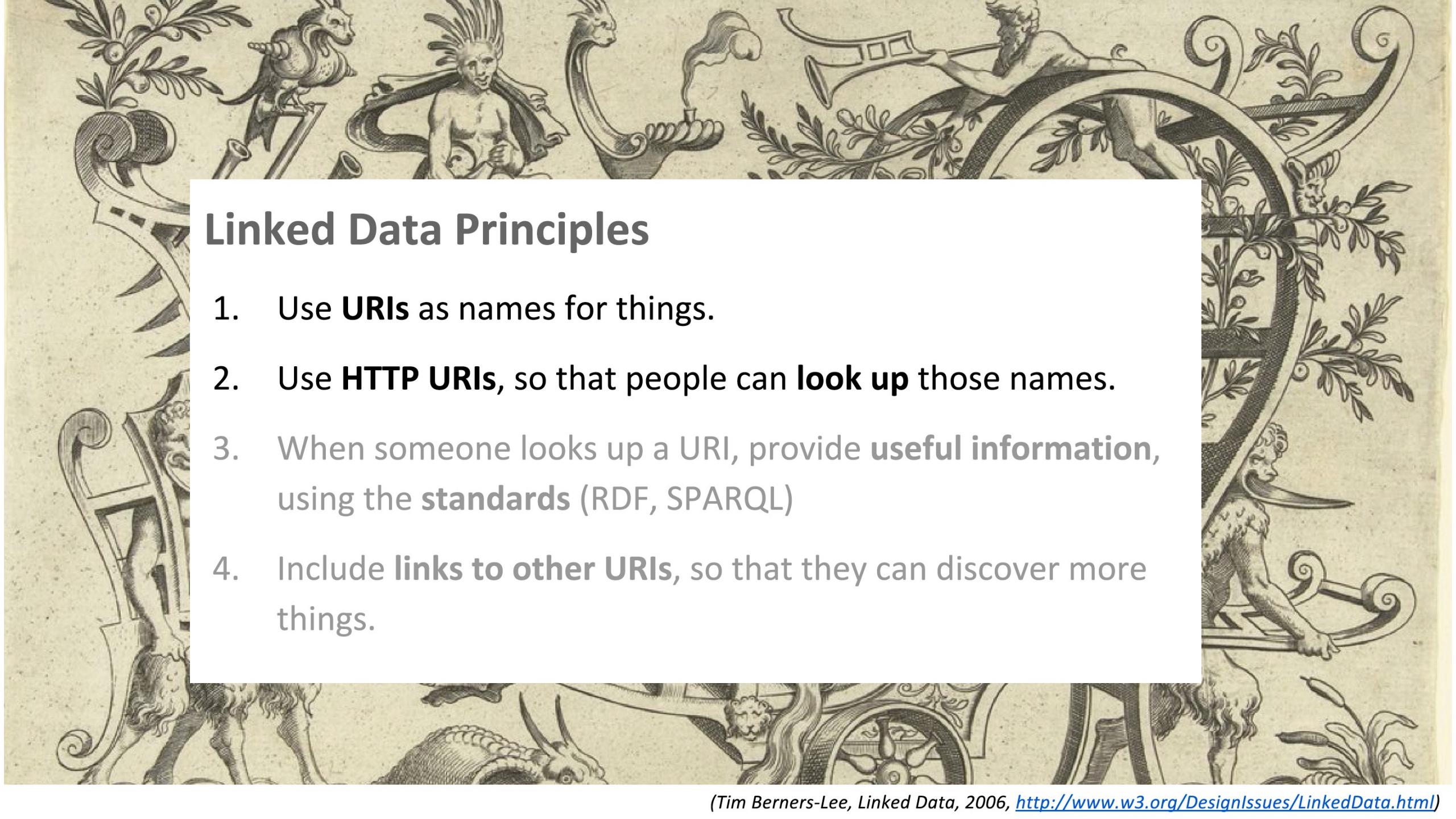
http://hpi.de/harald\_ foaf.rdf #me

*Designatum*

identifies me



[http://commons.wikimedia.org/wiki/File:Eiffel\\_tower\\_from\\_trocadero.jpg](http://commons.wikimedia.org/wiki/File:Eiffel_tower_from_trocadero.jpg)



## Linked Data Principles

1. Use **URIs** as names for things.
2. Use **HTTP URIs**, so that people can **look up** those names.
3. When someone looks up a URI, provide **useful information**, using the **standards** (RDF, SPARQL)
4. Include **links to other URIs**, so that they can discover more things.

# Linked Data and the Web

