

How Publish your own Linked Data

- Based on content by HPI / Harald Sack

- <https://www.youtube.com/watch?v=qsXc57i-I3Y&list=PLoOmvuyo5UAFY6jb46jCpMoqb-dbVewxg&index=35>

Understand your Data

- What are the **key things present in your data?**
 - People ?
 - Places ?
 - Books ?
 - Films ?
 - Musicians ?
 - Photographs ?
 - Reviews ?
 - Comments ?
 - Animals ?
 - Plants ?
 - Research Data ?
 - ...

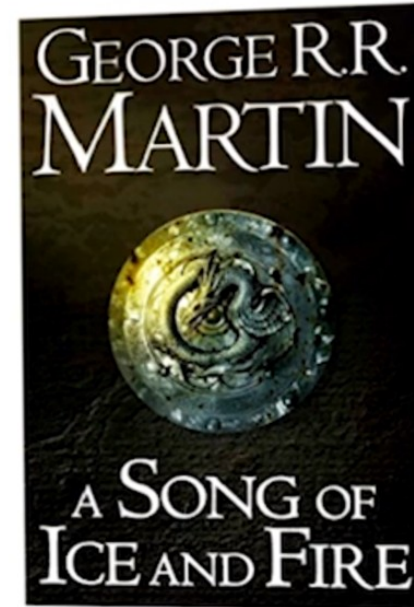
Dataset to be used:

<https://www.kaggle.com/mylesoneill/game-of-thrones>



Hands On Example

- Character Deaths in *GAME OF THRONES*
 - Character Names
 - Allegiances
 - Gender
 - Nobility
 - Appears in Book x
 - Dies in Book x
 - Death Year



Dataset available at:

<http://www.kaggle.com/mylesoneill/game-of-thrones>

Dataset to be used:

Look at the dataset:

Character-deaths.csv from

<https://www.kaggle.com/mylesoneill/game-of-thrones>

[https://github.com/gwohlgen/misc/blob/master/
cd.csv](https://github.com/gwohlgen/misc/blob/master/cd.csv)

First ideas

- **So how could we transform this csv file into RDF?**
- **What to be aware of?**
- **How to save / use the new dataset?**

Exercise: Steps

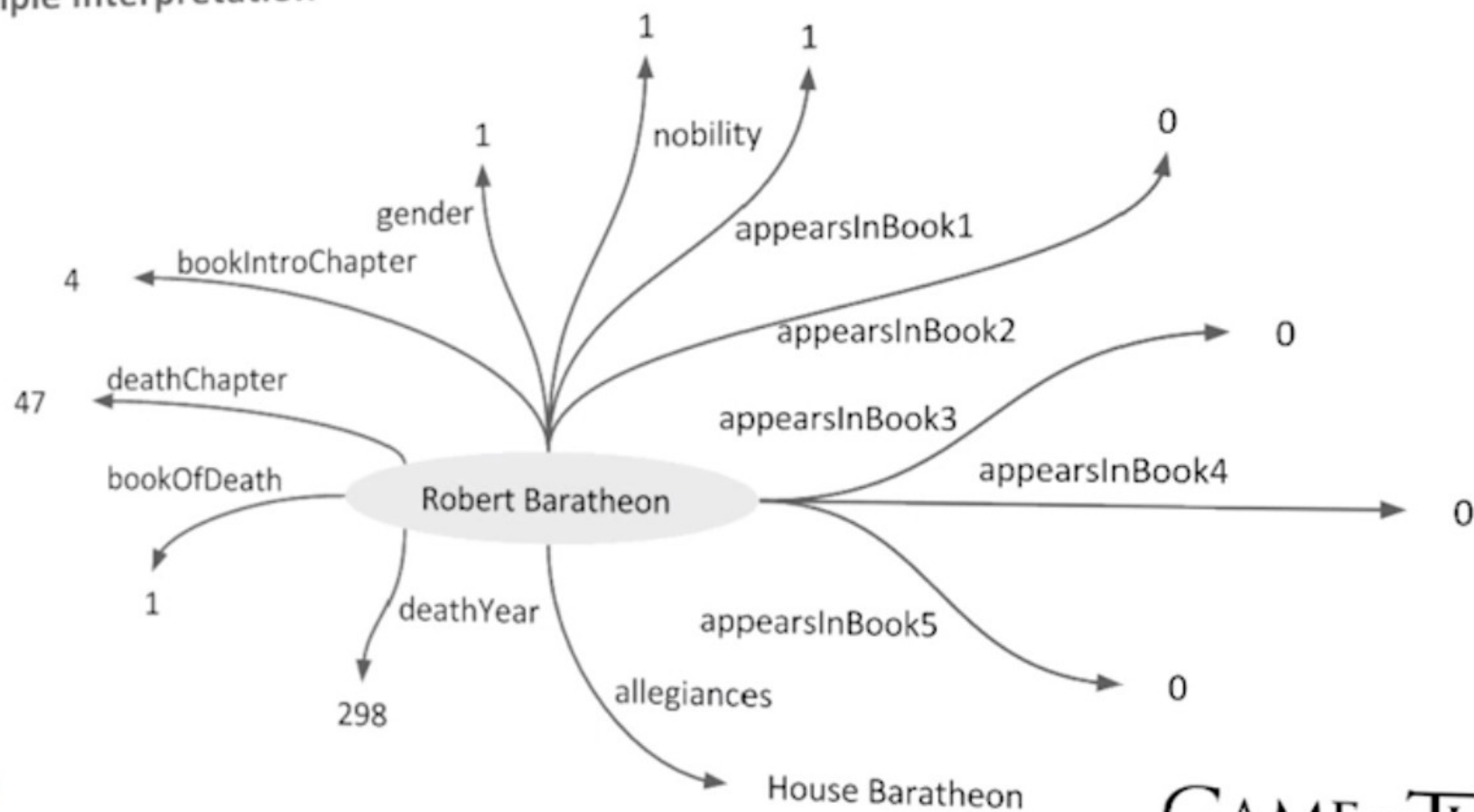
- **Manually transform** only part of one row
- Extend to the **full row**

Exercise: Next Steps

- Try to load it into a triple store, or use for example Python and **rdflib** to load the small dataset you produce
- When it works – **make a script** that converts the dataset into rdf
- Make some SPARQL queries against the data

From Table to Triples

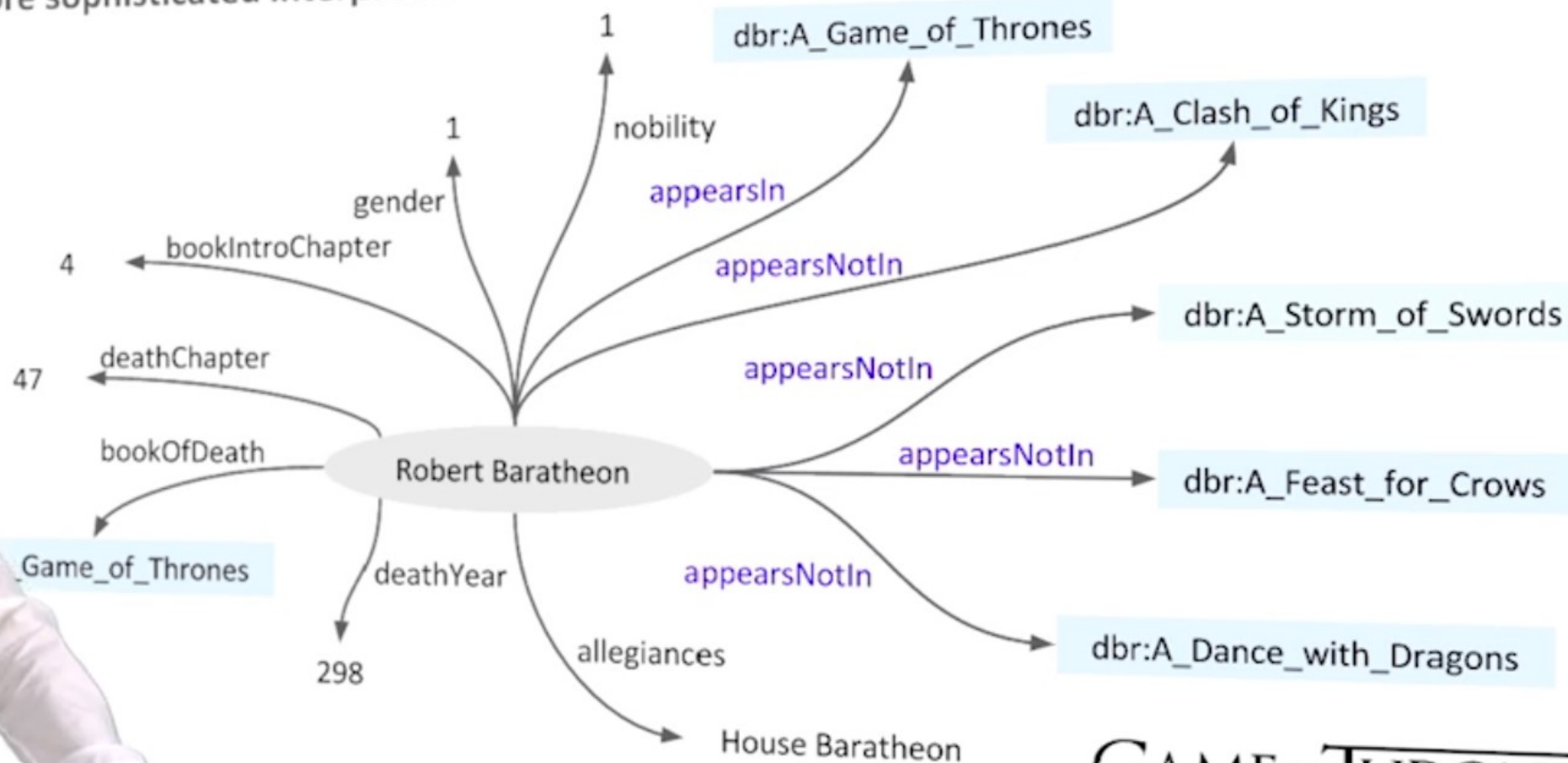
Simple Interpretation



GAME OF THRONES

From Table to Triples

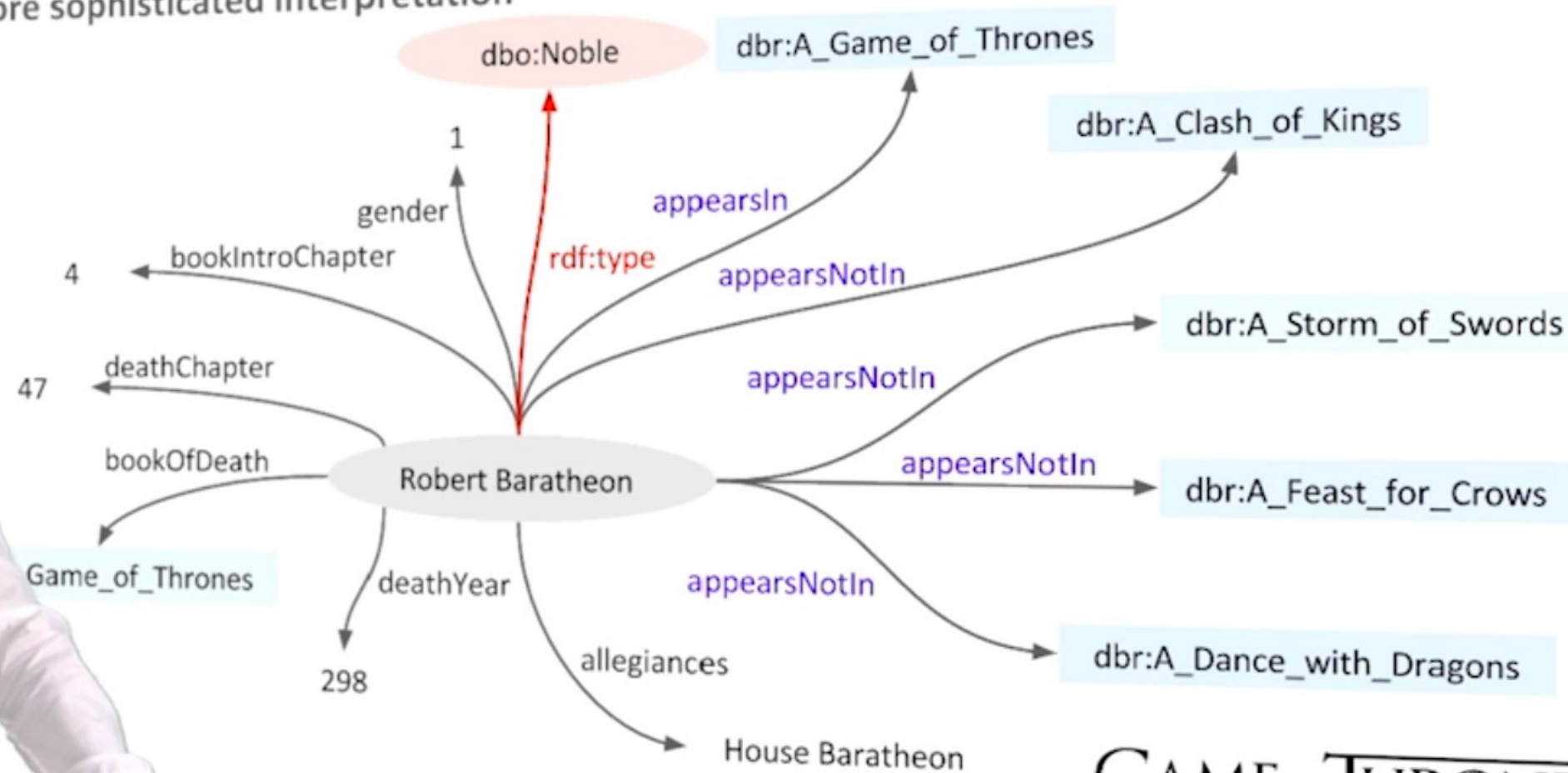
More sophisticated interpretation



GAME OF THRONES

From Table to Triples

More sophisticated interpretation



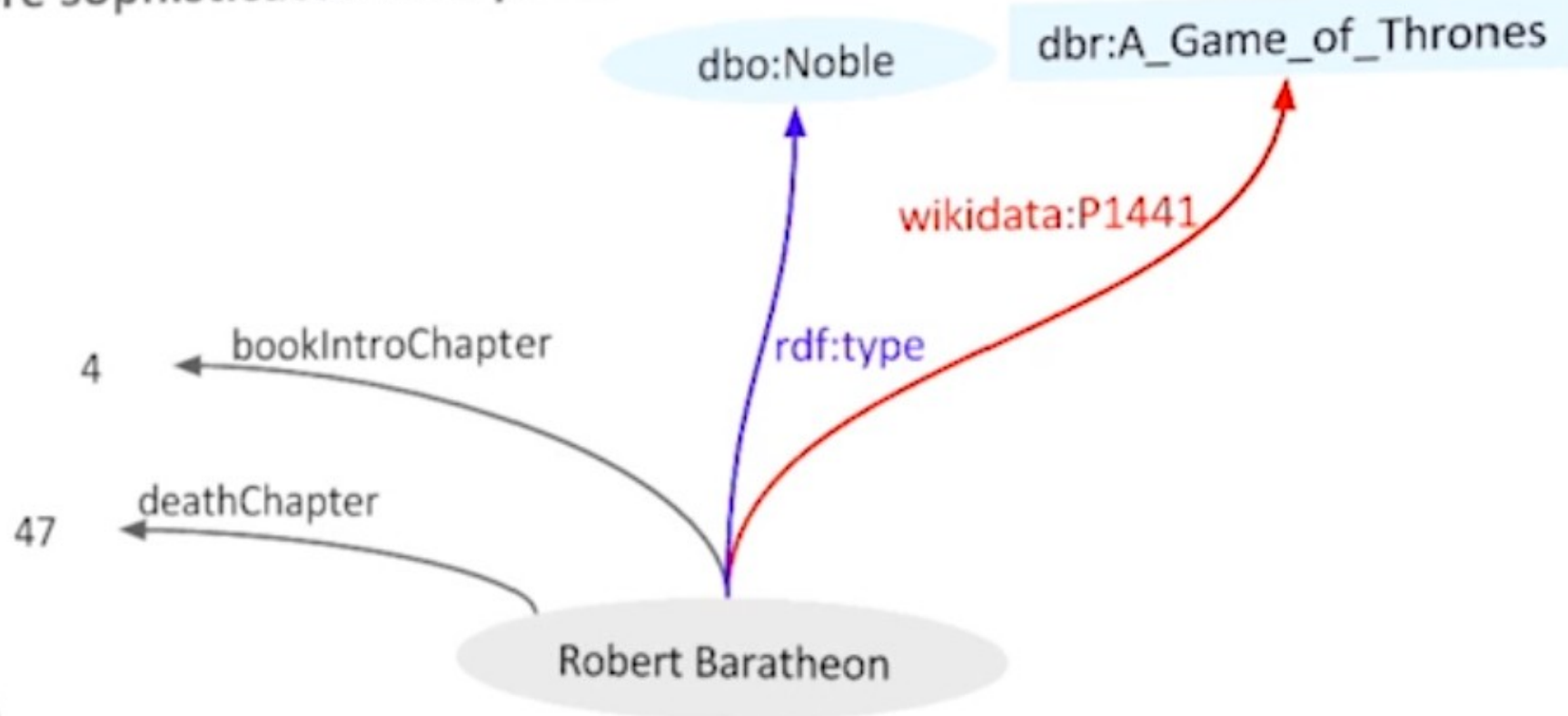
GAME OF THRONES

Vocabularies to be used

- Principles:
 - **Reuse**, don't reinvent
 - **Mix** liberally
- Potential Ontologies / Vocabularies:
 - **FOAF** (for persons and names)
 - **DBpedia Ontology** (Person, Book, death date, lastAppearance, FictionalCharacter)
 - **Wikidata** (gender, Male, Female)

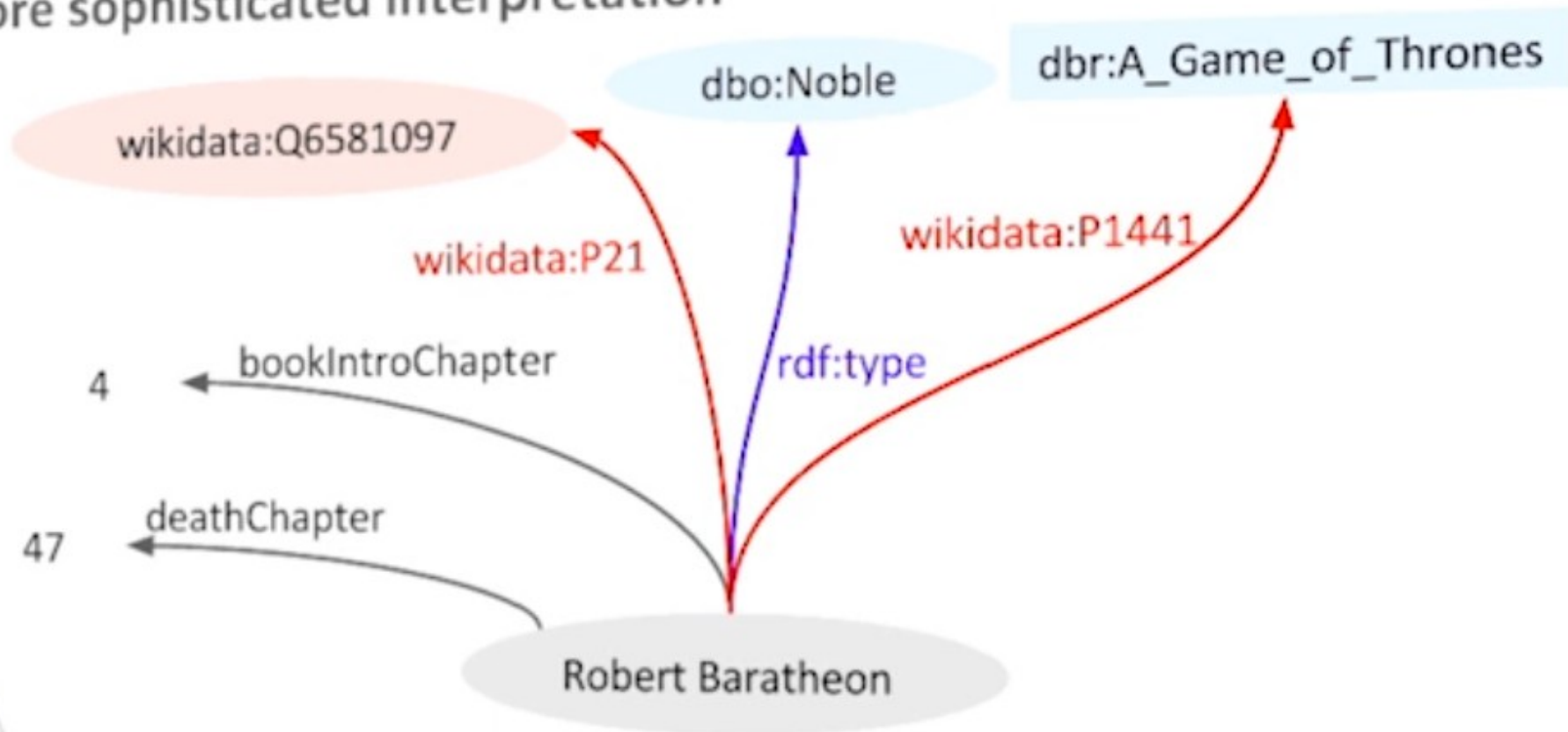
From Table to Triples

More sophisticated interpretation



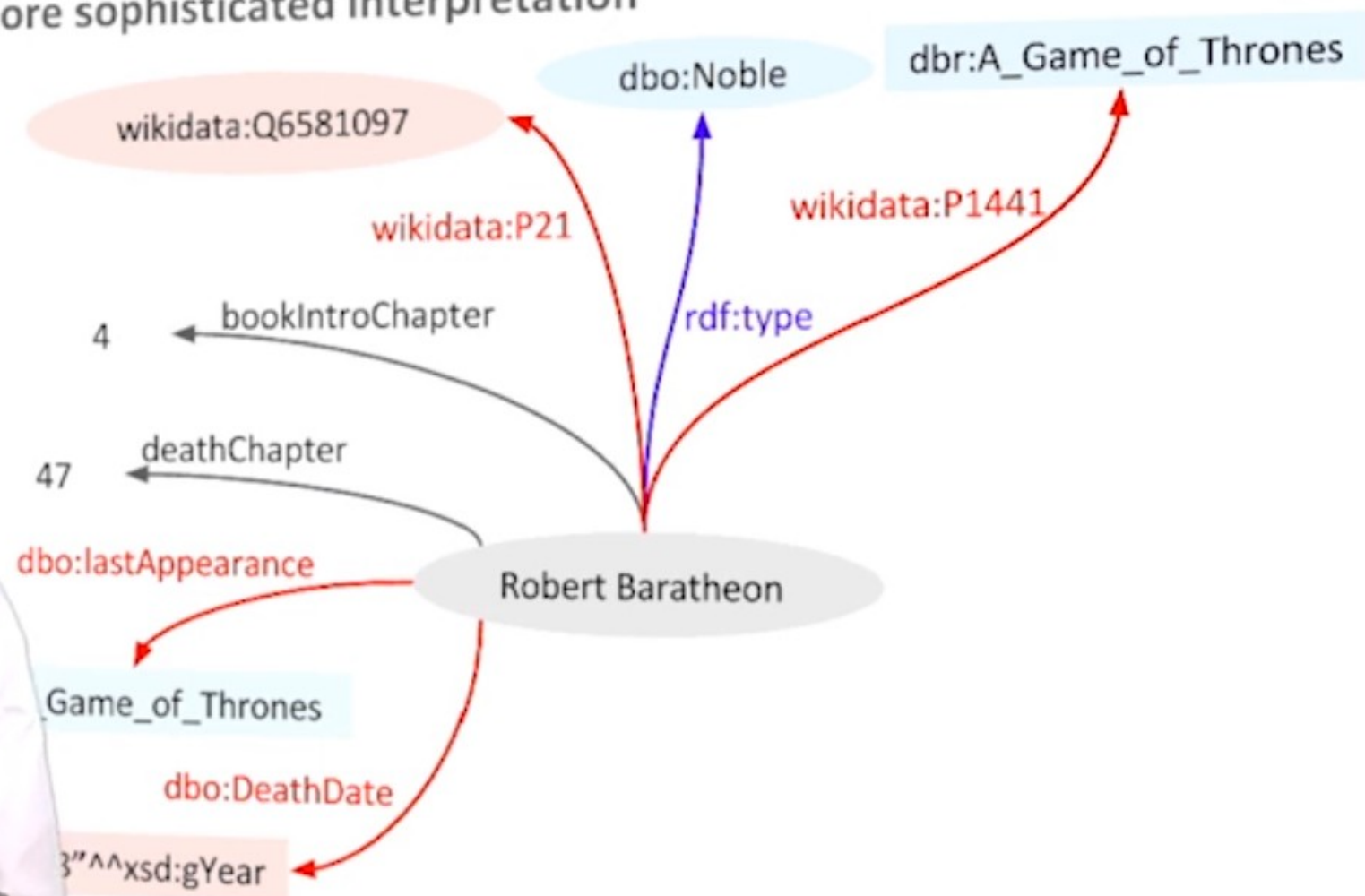
From Table to Triples

More sophisticated interpretation



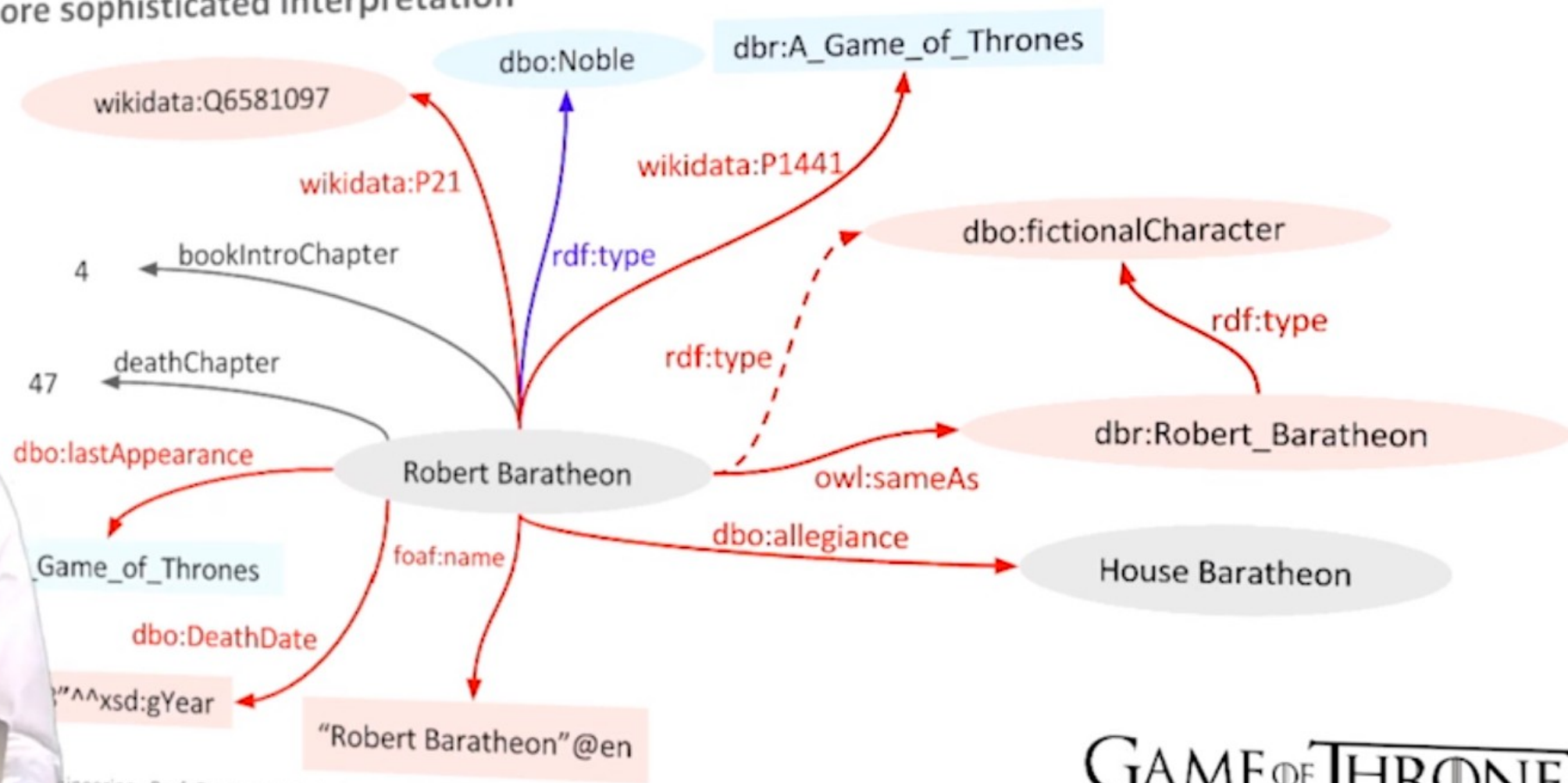
From Table to Triples

More sophisticated interpretation



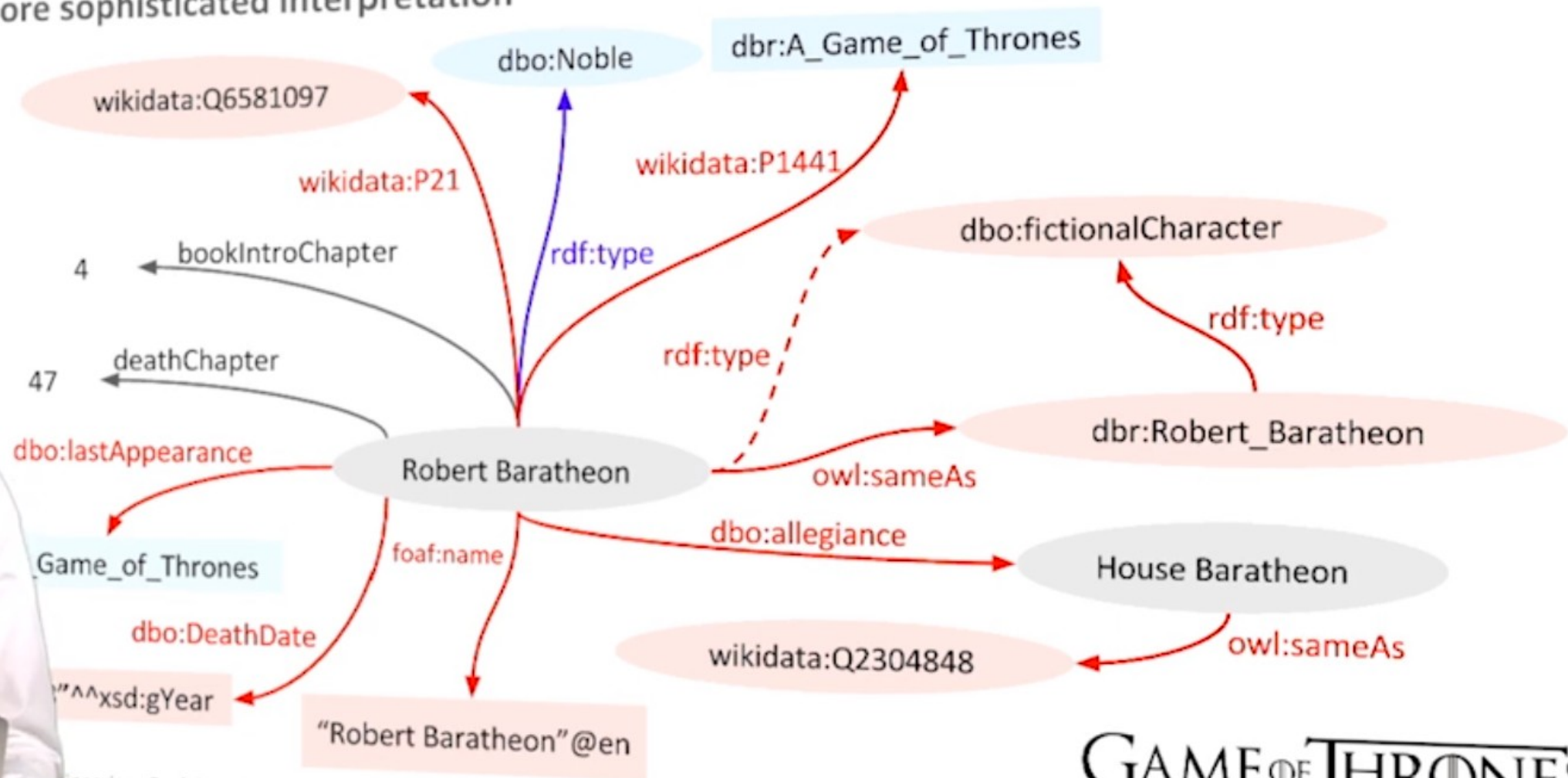
From Table to Triples

More sophisticated interpretation



From Table to Triples

More sophisticated interpretation



GAME OF THRONES

Choosing URIs

- Keep out of other peoples' namespaces
 - http://dbpedia.org/resource/Neil_Armstrong/
 - http://dbpedia.org/resource/Neil_Armstrong/mything
- Abstract away from implementation details
 - <http://dbpedia.org/resource/Berlin>
 - <http://www4.wiwiw.fu-berlin.de:2020/demos/dbpedia/cgi-bin/resources.php?id=Berlin>

Hash or slash

- <http://mydomain.org/foaf.rdf#me>
- <http://mydomain.org/id/me>

Convert to RDF



Most simple form: Database export as CSV

- RDB to RDF
 - **Rows** denote facts about a common **subject** denoted by the primary key
 - **Columns** denote **properties** and **property values**
- Substitute field values with suitable URIs
Jon Snow → `http://mydomain.org/persons/Jon_Snow`
or
- interpret values as (typed) literals
299 → `"299"^^<http://www.w3.org/2001/XMLSchema#gYear>`

Fr Convert to RDF

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Reuse existing vocabularies, if possible

- @PREFIX : <http://mydomain.org/persons/> .
@PREFIX foaf: <http://xmlns.com/foaf/0.1/> .
@PREFIX wikidata: <https://www.wikidata.org/entity/> .
@PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@PREFIX dbo: <http://dbpedia.org/ontology/> .

```
:Jon_Snow      rdfs:label "Jon Snow"@en ;  
               foaf:name "Jon Snow"@en ;  
               rdf:type dbo:FictionalCharacter ;  
               dbo:allegiance :NightsWatch ;  
               :deathChapter 47 ;  
               wikidata:P21 wikidata:Q6581097 .
```

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Link to Other Linked Data Datasets



GAME^{OF}THRONES

<http://mydomain.org/>



```
:Jon_Snow      owl:sameAs dbr:Jon_Snow_(character) .  
:NightsWatch  owl:sameAs wikidata:Q1088558 .
```



Set Up your Infrastructure

