

Modeling FRBR entities and their relationships with TEI

A look at HallerNet bibliographic descriptions

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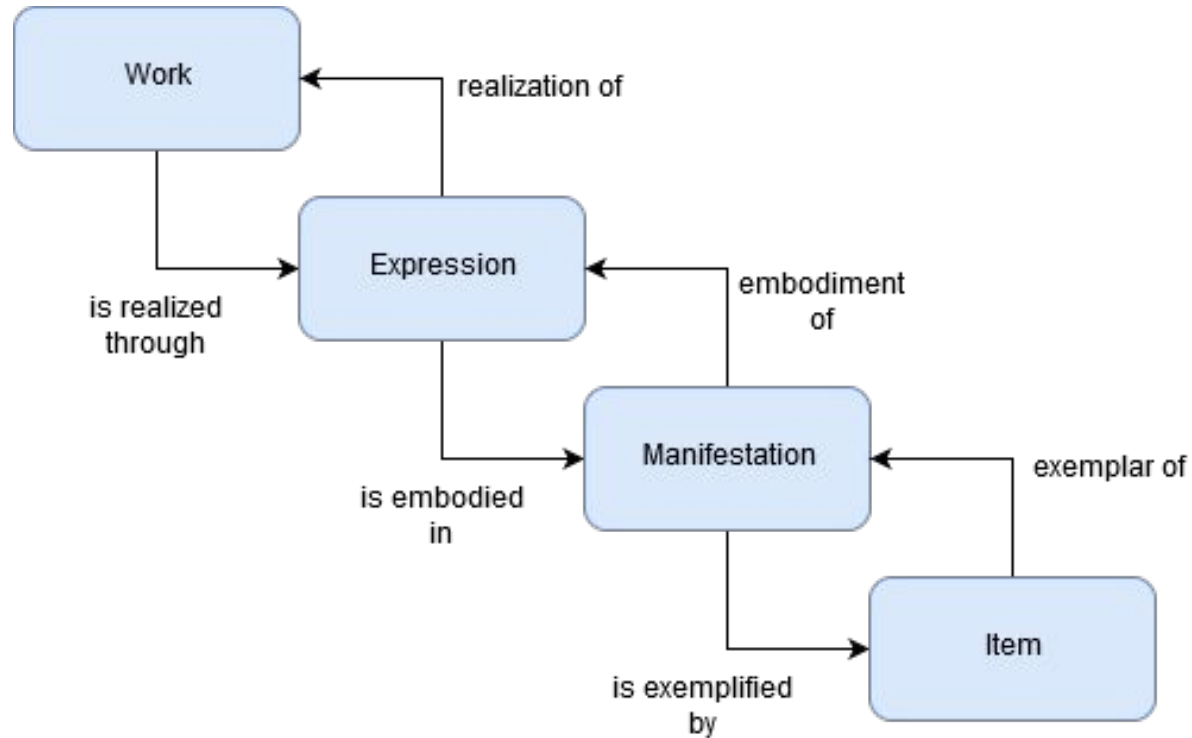
<https://tinyurl.com/y2ggcug9>

What is FRBR?

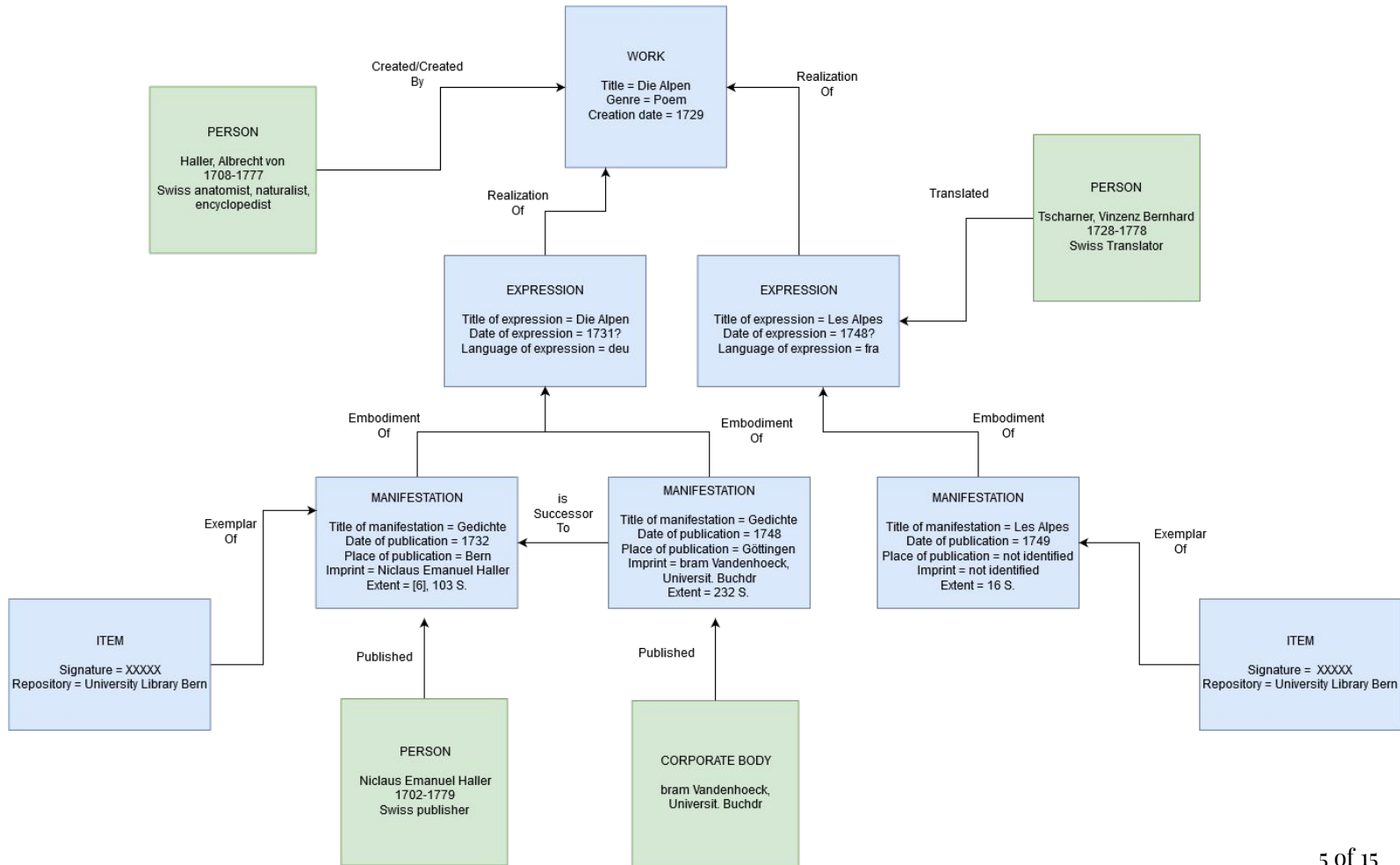
- FRBR (pronounced “furbur”) stands for “Functional Requirements for Bibliographic Records”.
- It is a document issued by the International Federation of Library Associations’ (IFLA) Cataloguing Section in 1997.
- The main purpose of FRBR is to enable users to perform tasks such as find, identify, select and obtain a resource and to navigate a catalogue (IFLA, 2009).
- It is an entity-relationship model that identifies three group entities, their attributes and the possible relationships that can exist between any two entities.
- It is the foundation for Resource Description and Access (RDA, 2010) and for its object-oriented version -- FRBRoo -- harmonised with CIDOC CRM (2015).

Entity	Definition	Examples
work	“A distinct intellectual or artistic creation.”	<i>El Quijote</i>
expression	“The intellectual or artistic realization of a work in the form of alpha-numeric...”	The Spanish text written by Cervantes in 1604; English version translated by Edith Grossman in 2003.
manifestation	“The physical embodiment of an <i>expression of a work.</i> ”	The <i>editio princeps</i> printed in 1605; the English edition published by Ecco/Harper Collins in 2003.
item	“A single exemplar of a manifestation.”	One of the exemplars of the <i>editio princeps</i> preserved in the Spanish National Library; my copy of Ecco’s edition.

Group 1 entities and the Primary Relationships



Group 1 and 2 entities and their Primary Relationships



MARC vs. FRBR

- MARC records are a “by-product of card production” (Coyle, 2016: 51) -- they are flat data structures, in which all pertinent information is collapsed into a single record described normally at the level of the *manifestation*.
- FRBR model suggests a “distributed” data structure (Croissant, 2012: 12) where different records can be created for each individual bibliographic entity.
- Each of the FRBR relationships should be defined with an identifier and linked to connect pre-existing records for Group 1 or Group 2.

An entity-relationship model implemented in TEI?

- The TEI does not cover the creation of bibliographic records *per se* but of “bibliographic references” and “bibliographic descriptions”.
- <bibl> (bibliographic citation) “contains a loosely-structured bibliographic citation of which the sub-components may or may not be explicitly tagged”.
- <biblStruct> (structured bibliographic citation) “contains a structured bibliographic citation, in which only bibliographic sub-elements appear and in a specified order”.

```
<bibl>Blain, Clements and Grundy: Feminist Companion to Literature in English (Yale, 1990)</bibl>
```

```
<biblStruct>  
<monogr>  
  <author>Blain, Virginia</author>  
  <author>Clements, Patricia</author>  
  <author>Grundy, Isobel</author>  
  <title>The Feminist Companion to Literature in English: women writers from the middle ages  
    to the present</title>  
  <edition>first edition</edition>  
  <imprint>  
    <publisher>Yale University Press</publisher>  
    <pubPlace>New Haven and London</pubPlace>  
    <date>1990</date>  
  </imprint>  
</monogr>  
</biblStruct>
```

An entity-relationship model implemented in TEI?

- The TEI defines mechanism to identify properly elements (e.g., `@xml:id`) and `<idno>`.
- `<relatedItem>` “contains or references some other bibliographic item which is related to the present one in some specified manner, for example as a constituent or alternative version of it”.
- `<relatedItem>` in combination with `@type`, `<ref>` and `@target` can express typed relationships and point to other elements.

```
<biblStruct>
  <monogr>
    <author>Tolkien, J.R.R.</author>
    <title level="m">Den hobbit</title>
    <title type="sub">aus dem Engleschen iwwersat</title>
    <editor role="translator">Henry Wickens</editor>
    <imprint>
      <pubPlace>Esch-sur-Sûre</pubPlace>
      <publisher>Op der Lay S. àr. L</publisher>
      <date>2002</date>
    </imprint>
  </monogr>
  <relatedItem type="translatedFrom">
    <bibl>
      <author>Tolkien, J.R.R.</author>
      <title level="m">The Hobbit</title>.
      <publisher>Collins</publisher>
      <date>1997</date>
    </bibl>
  </relatedItem>
</biblStruct>
```


An entity-relationship model implemented in TEI?

WORK

```
<bibl type="work"
  xml:id="work_00001">
  <title>Title of the work</title>
  <date>Date of the work</date>
</bibl>
```

EXPRESSION

```
<bibl type="expression"
  xml:id="expression_00001" xml:lang="de">
  <title>Title of the expression</title>
  <date when="YYYY"/>
  <relatedItem type="realizationOf">
    <ref target="#work_00001"/>
  </relatedItem>
</bibl>
```

A look at hallerNet

- hallerNet (<http://hallernet.org/>) is a research platform launched in 2019 that aims to publish the correspondence by Albrecht von Haller and to provide contextual information about the named entities (works, people, places, institutions, etc.) mentioned in his letters.
- It contains about 35.000 bibliographic descriptions of publications by and about Haller encoded in TEI with `<biblStruct>`.





*Gedichte (1732)

Publikation

ID 14987

Kerndaten

Publikation	*Gedichte (1732)
Verfasser/in; Beitragende	<u>Haller, Albrecht von (1708-1777)</u>
Titel	Versuch schweizerischer Gedichten ...
Ort der Publikation	Bern
Jahr der Publikation	1732
Objekt-Nr. Biblio	00018
Objekt-Nr. Publik	03476

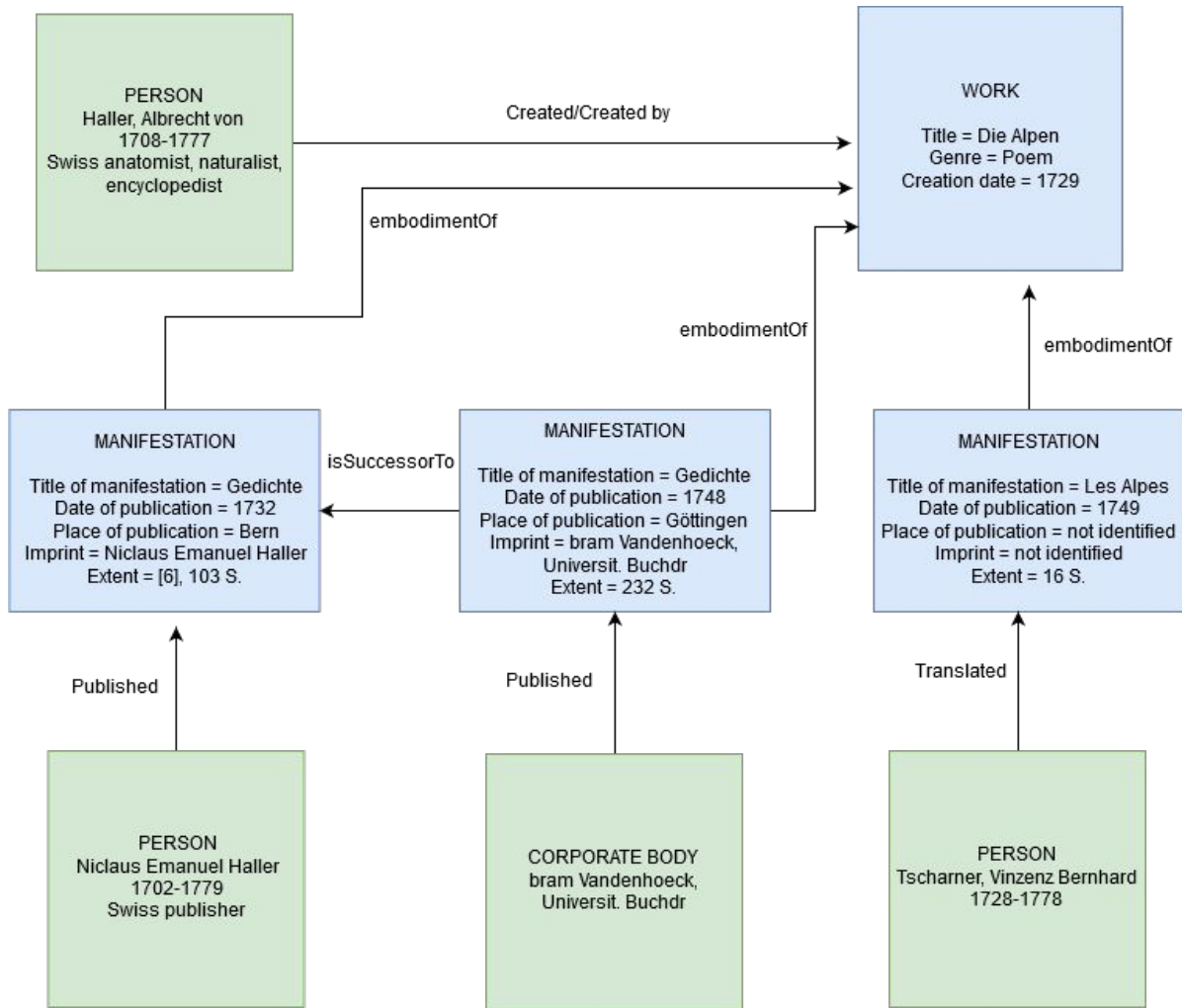
A look at hallerNet

- The bibliographic descriptions contain basic information mostly at the level of the *manifestation*.
- The majority of bibliographic description do not explicitly provide information about language (can be inferred by the title) and a minority contains information about *items* (e.g., signature, repository, etc.).
- We decided to adopt the entity *work* and treat our current descriptions as *manifestations*.

Relationship	Definition	TEI encoding	Related entities
Vertical	The hierarchical relationship between the abstract entity and its embodiment or between a part and the whole.	<pre><relatedItem @type="embodimentOf"> or <relatedItem @type="isPartOf"> + <ref @target></pre>	The <i>work</i> ; another <i>manifestation</i> that differs in language or imprint; a multi-volume <i>manifestation</i> .
Horizontal	The relationship in terms of subject, e.g. an entity has as subject another entity.	<pre><relatedItem @type="isAReviewOf"> + <ref @target></pre>	A reviewed <i>work</i> or <i>manifestation</i> .
Chronological	The relationship in time between issues of an entity, e.g., the relation of a serial to its predecessors and successors.	<pre><relatedItem @type="isASuccessorTo"> + <ref @target></pre>	A previous or next issue journal and (perhaps) a reprint at the level of <i>manifestations</i> .

hallerNet bibliographic data

model



Future development

- Make our dataset more abstract by creating new bibliographic records for *works* using `<bibl @type="work">`.
- Make explicit (manually?) the main connections between records encoded with `<biblStruct>` by using `<relatedItem @type>` to type relationships and `<ref @target>` to point to other entities.
- Modify the web application to create a list of related works (editions, issues, translations, reviews) for each record and visualize their relationships (e.g., diagram / network).

Bibliography

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- Noruzzi, Alirezza (2012). FRBR and Tillet's Taxonomy of Bibliographic Relationships. *Knowledge Organization*, 39(6), 409-416.