

eFRBR: An entity model for FRBR

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14 July
2015

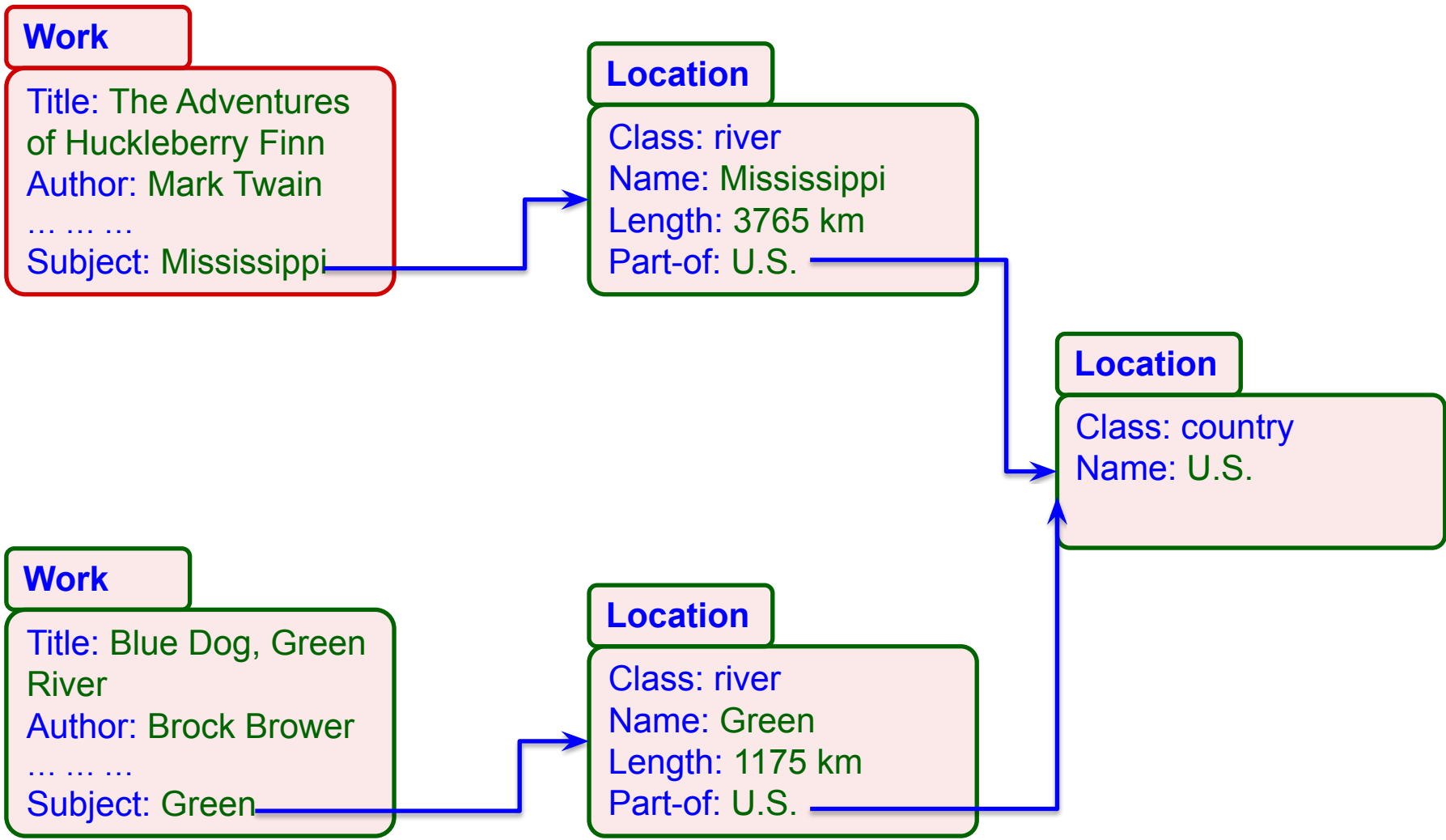
Give documents about **Mississippi**.

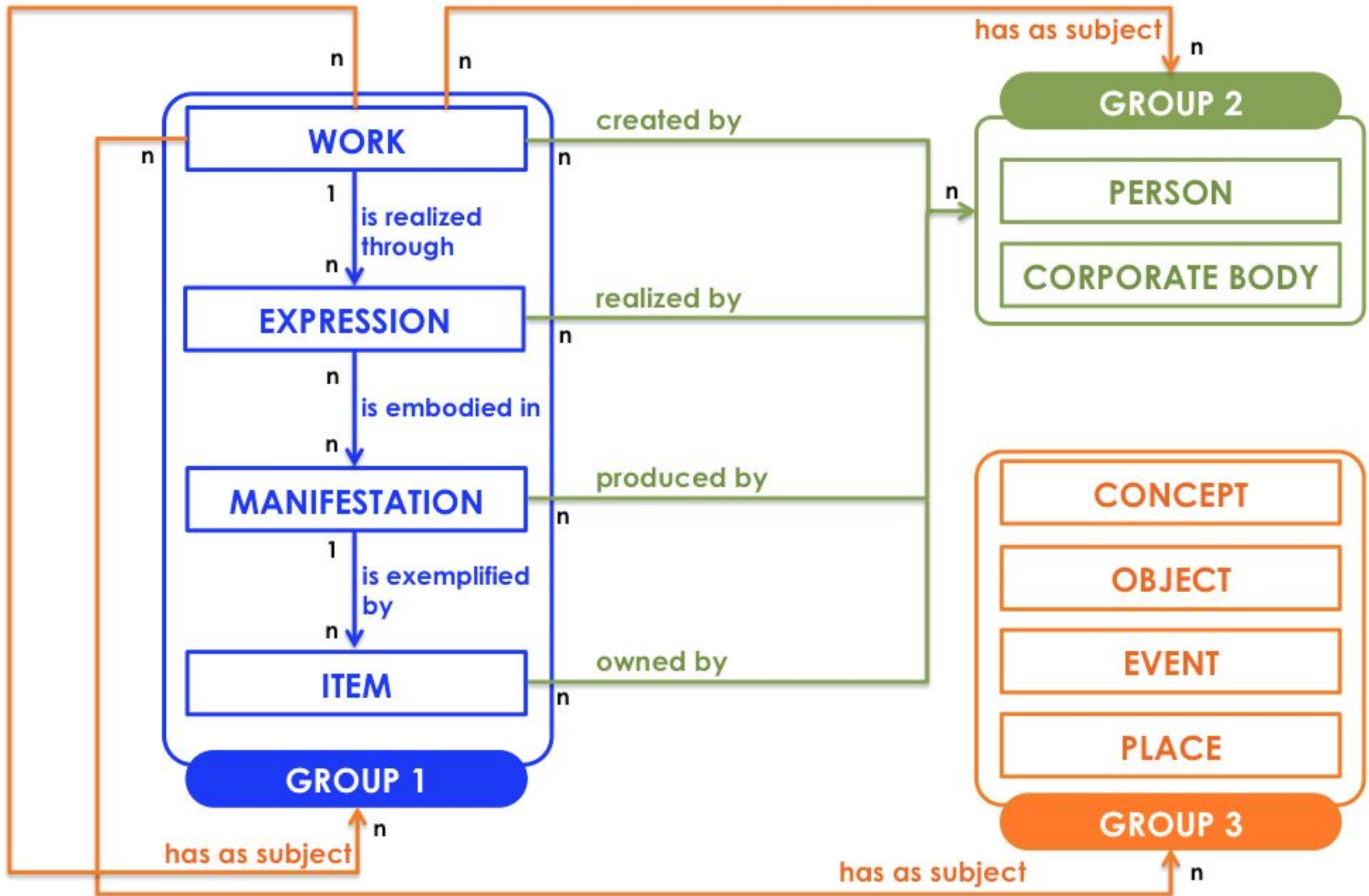
Give documents about the **longest river in US**.



Giunchiglia et.al. From Knowledge Organization to Knowledge Representation. Knowledge Organization Journal, 41(1), 44-56

Solution: entity-model & terminology





FRBR: starting point

1, 2



An aid as a conceptual framework

An aid to identify core entities

An aid to characterize abstract and physical aspects of documents

2



No explicit query specification

Less weight on group 2 & 3 entities

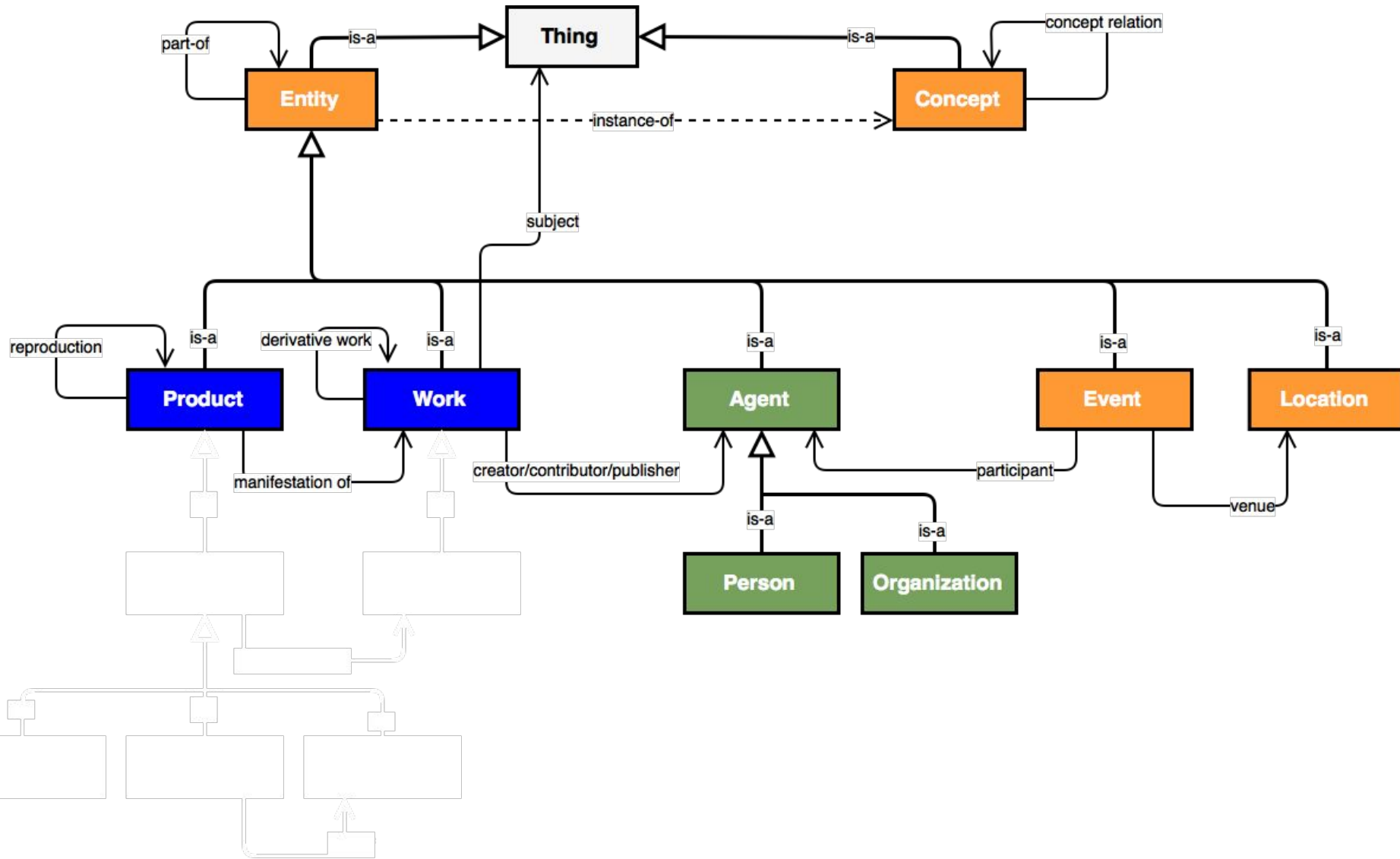
Absence of logical and physical model



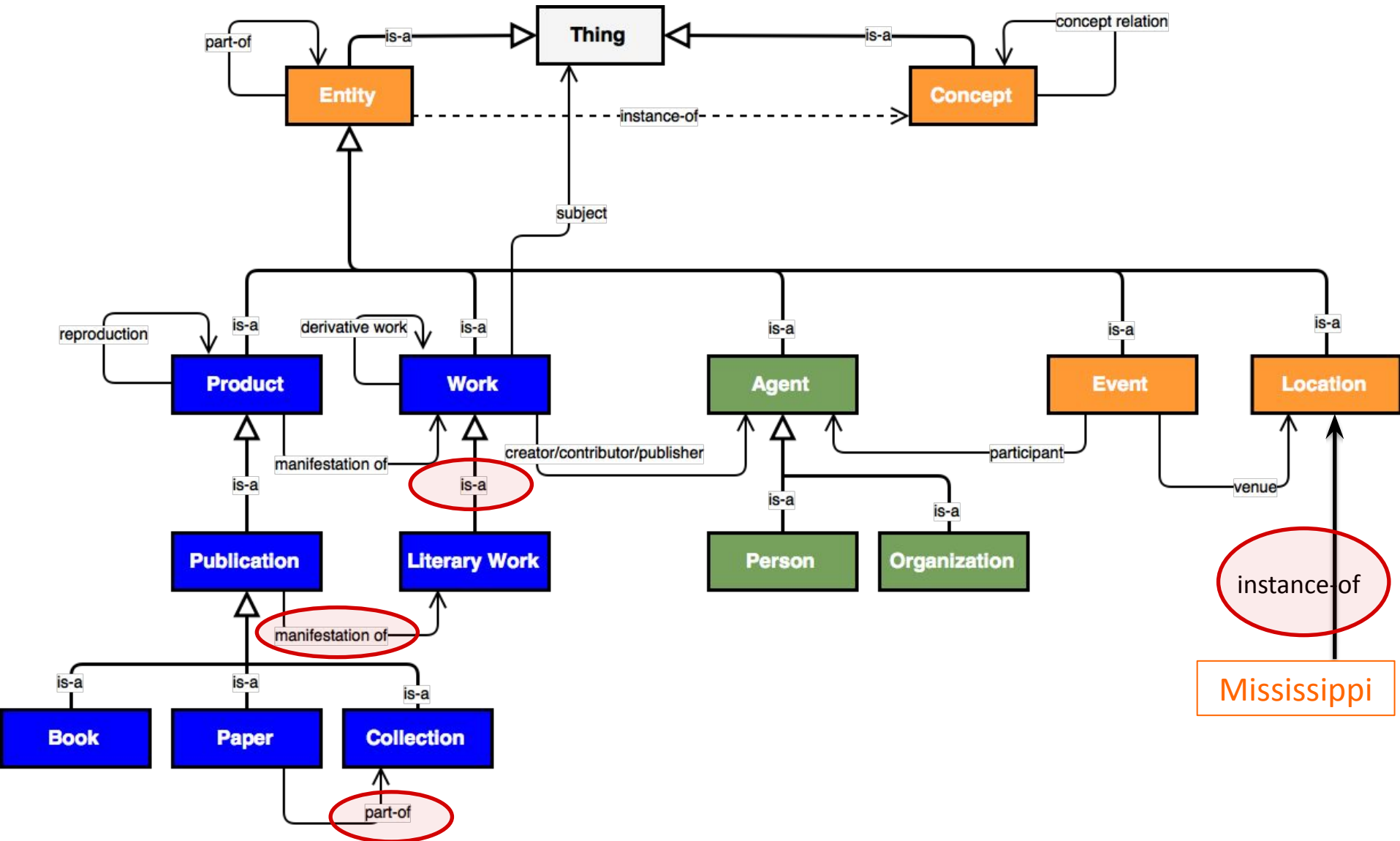
¹ *Tillett*, What is FRBR? A conceptual model for the bibliographic universe. *The Australian Library Journal*, 54(1), 24-30

² *Coyle*, FRBR, Twenty Years On. *Cataloging & Classification Quarterly*, 1-21

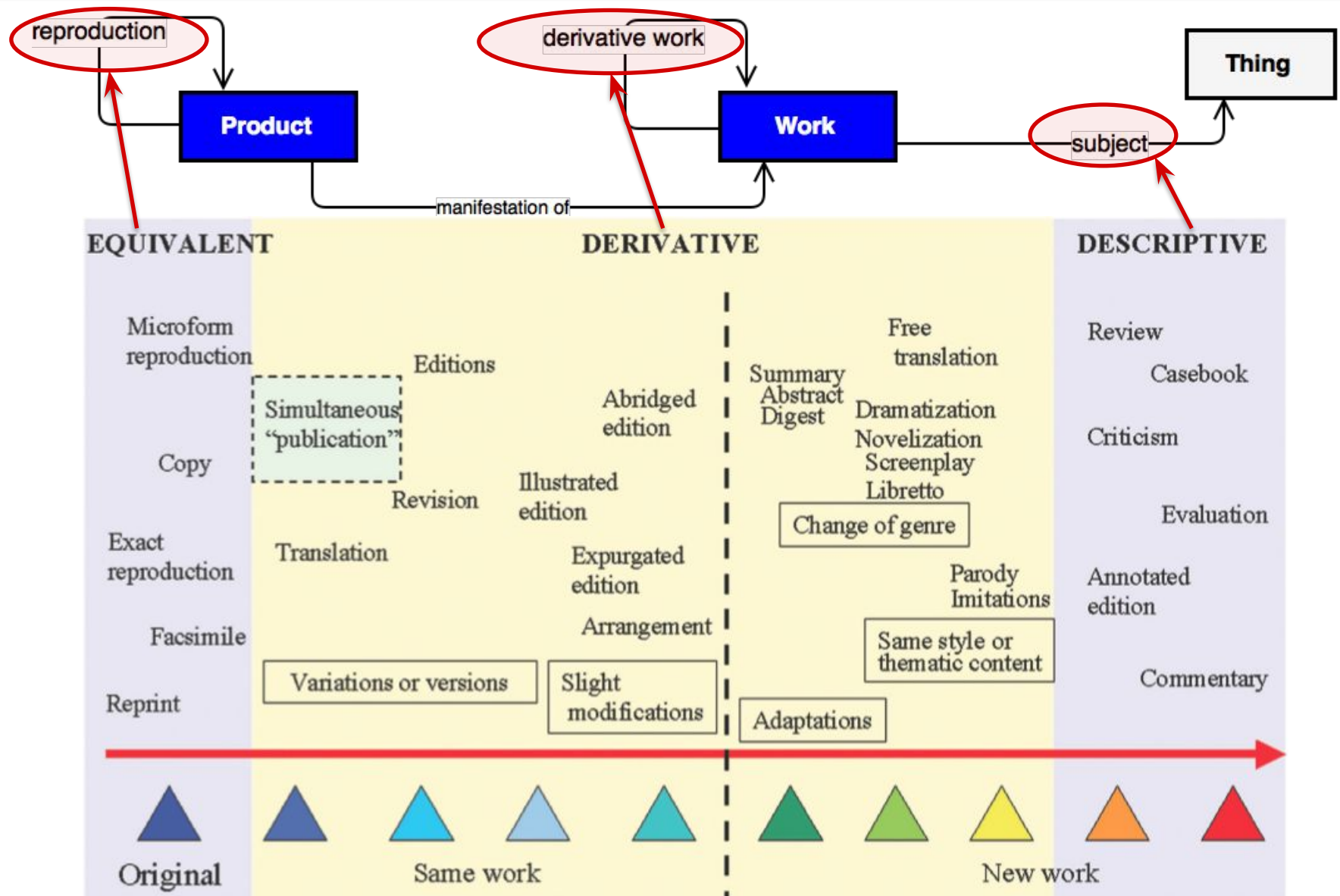
eFRBR: entity types (from conceptual to logical model)



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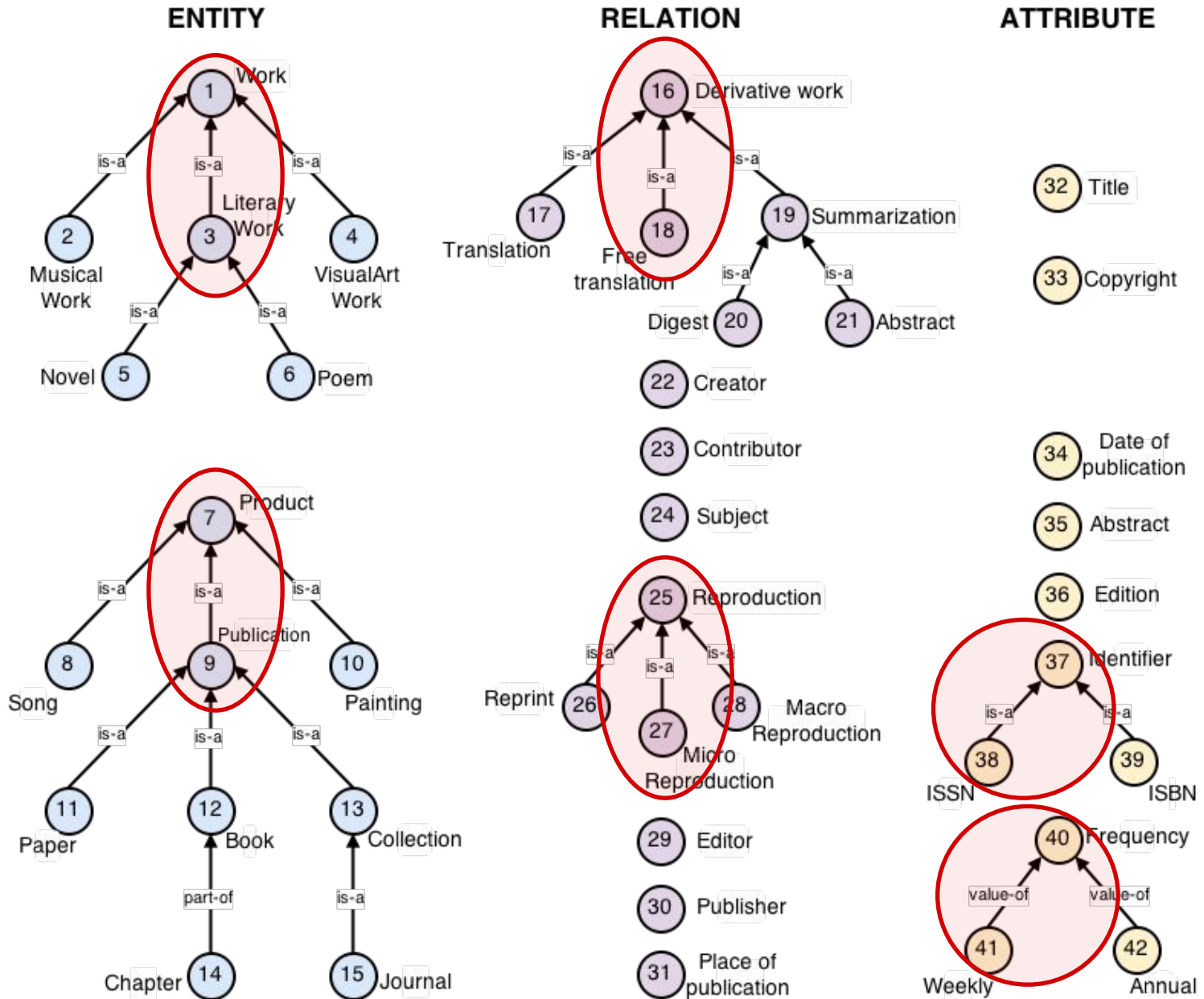


Continuum of works



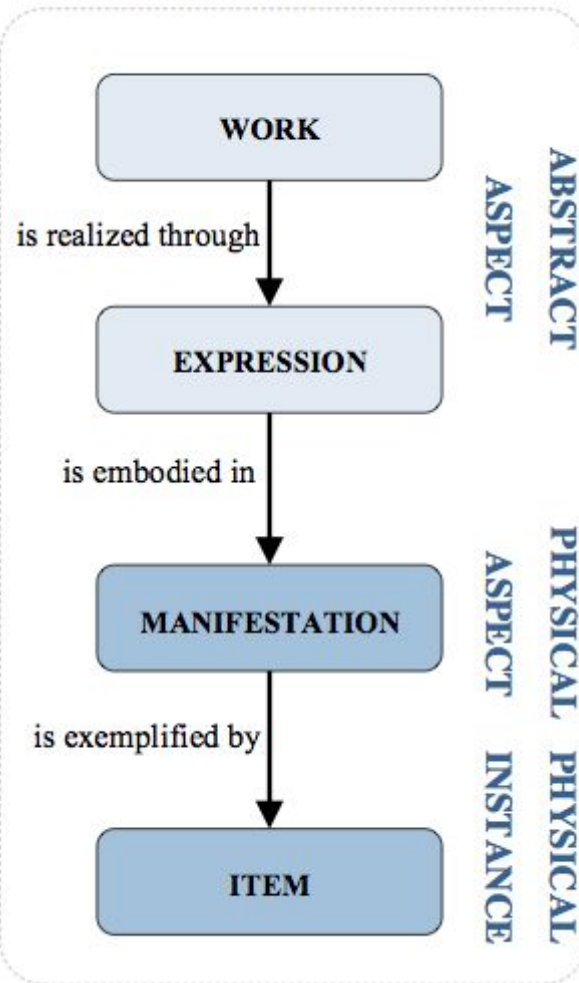
Tillett, What is FRBR? A conceptual model for the bibliographic universe. The Australian Library Journal, 54(1), 24-30

eFRBR: terminology

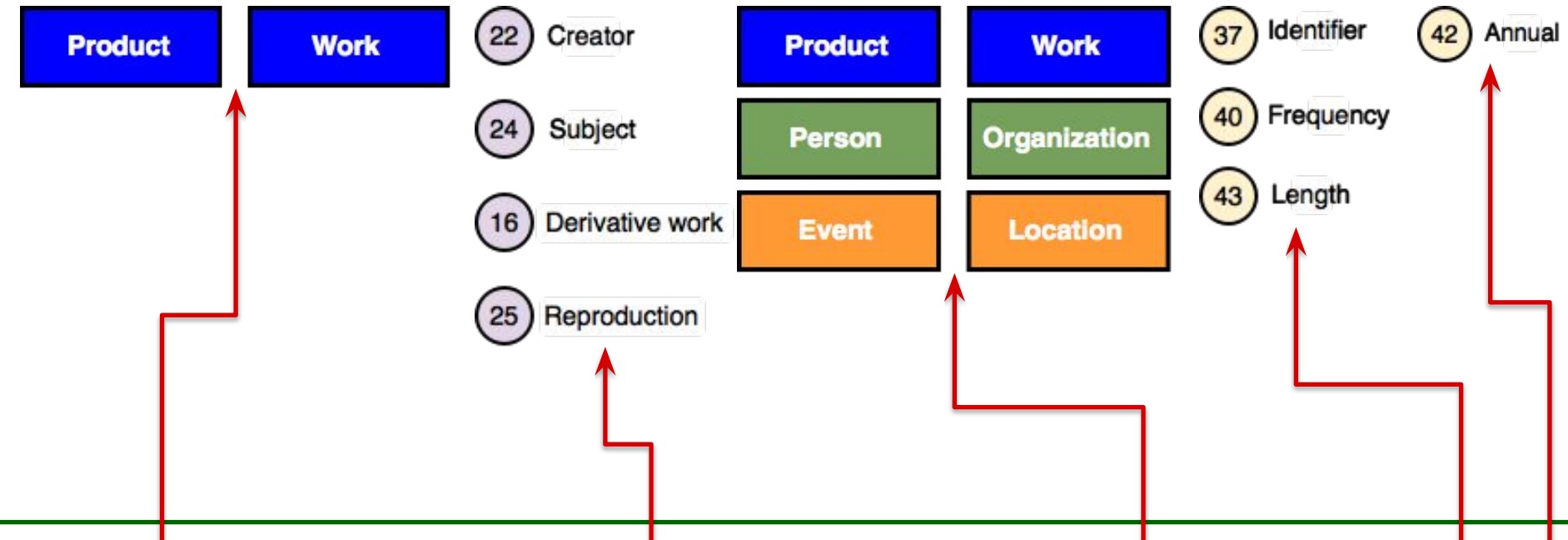


FRBR compared to eFRBR

FRBR GROUP 1 ENTITIES



Answering queries

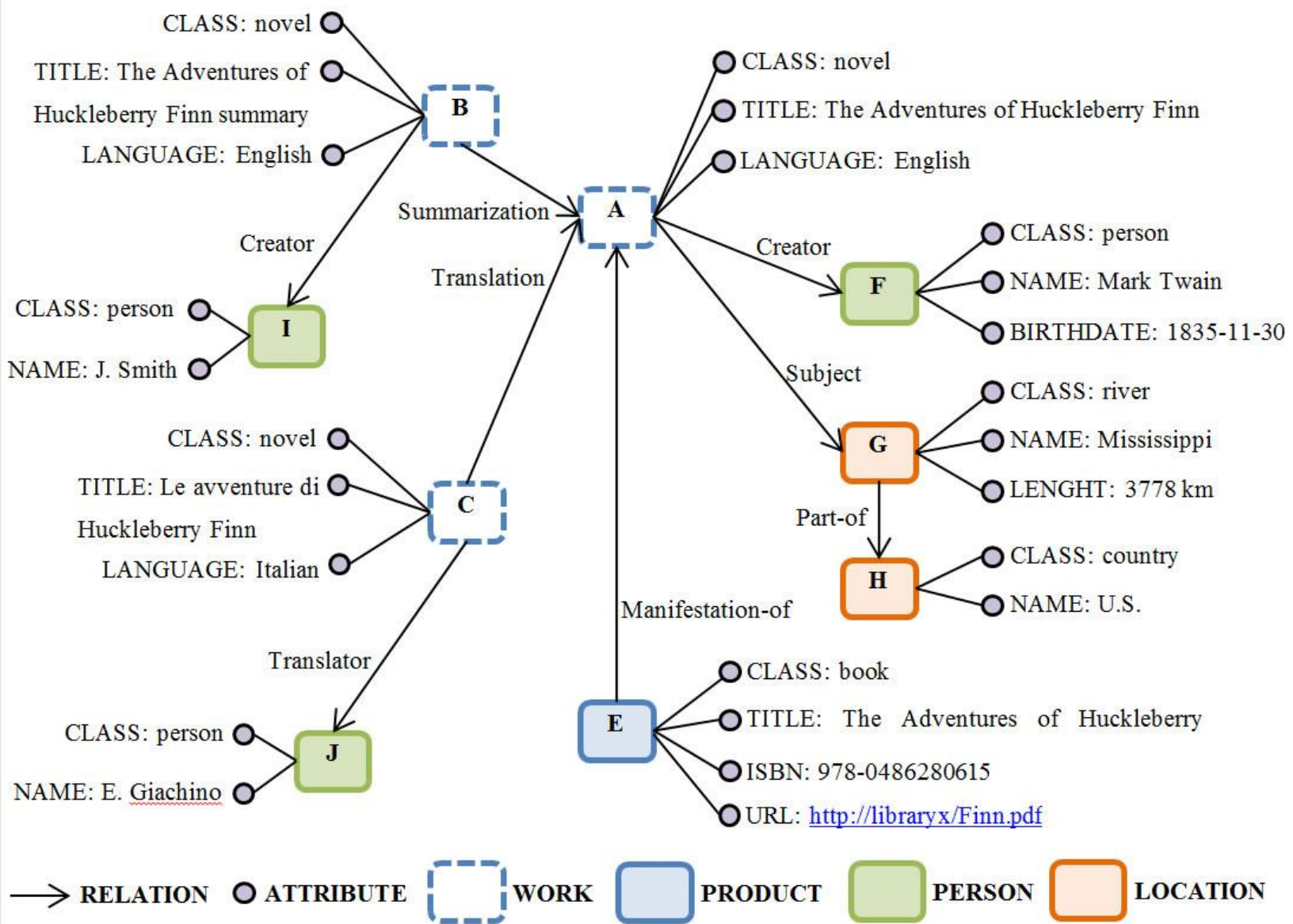


Find documents where property x denotes an entity of type y with property $z = \$$

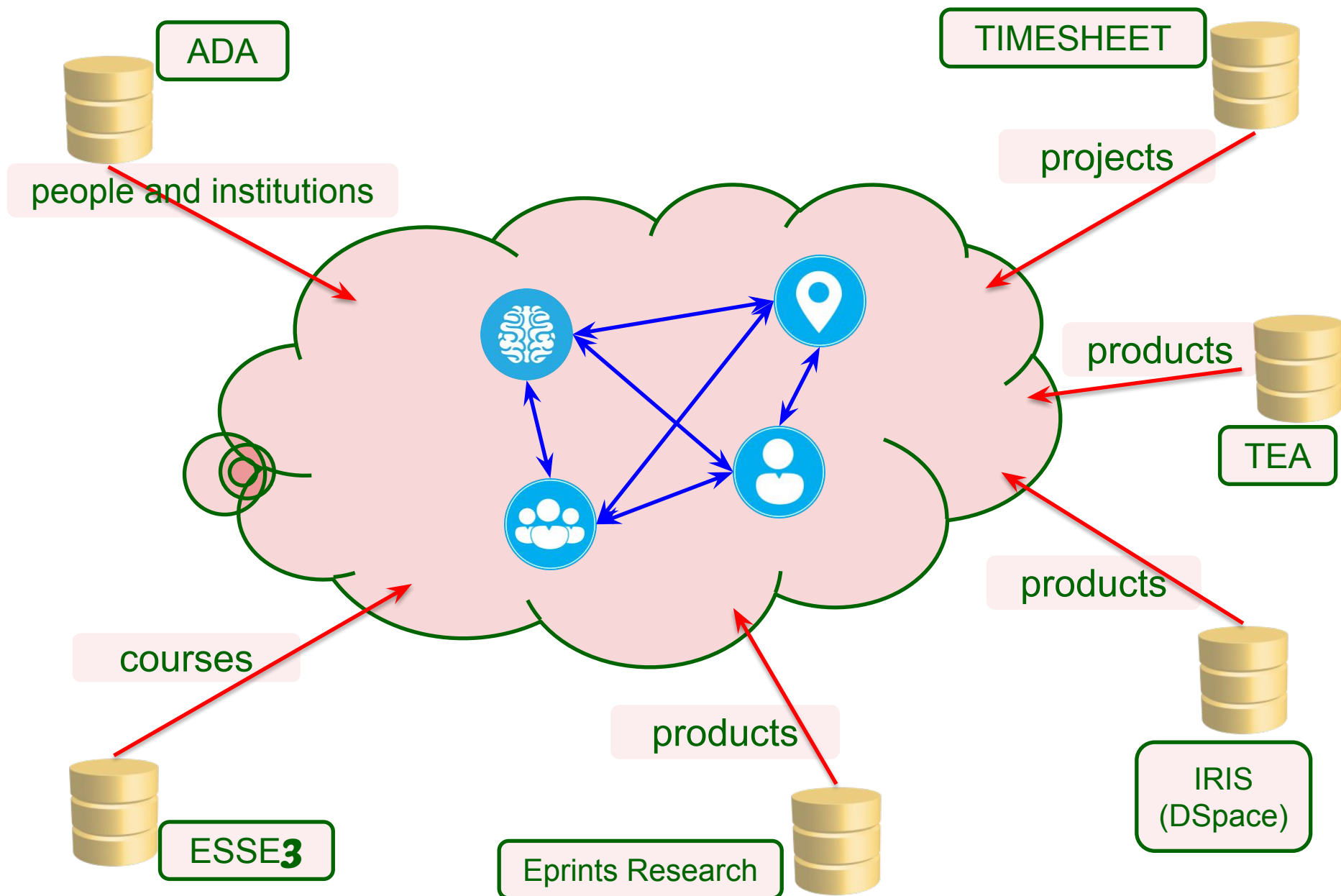
$type = Work$ and $subject = \$1$ and $\$1.type = river$ and $\$1.length > 2000$ and $\$1.part-of = "US"$

Knowledge graph

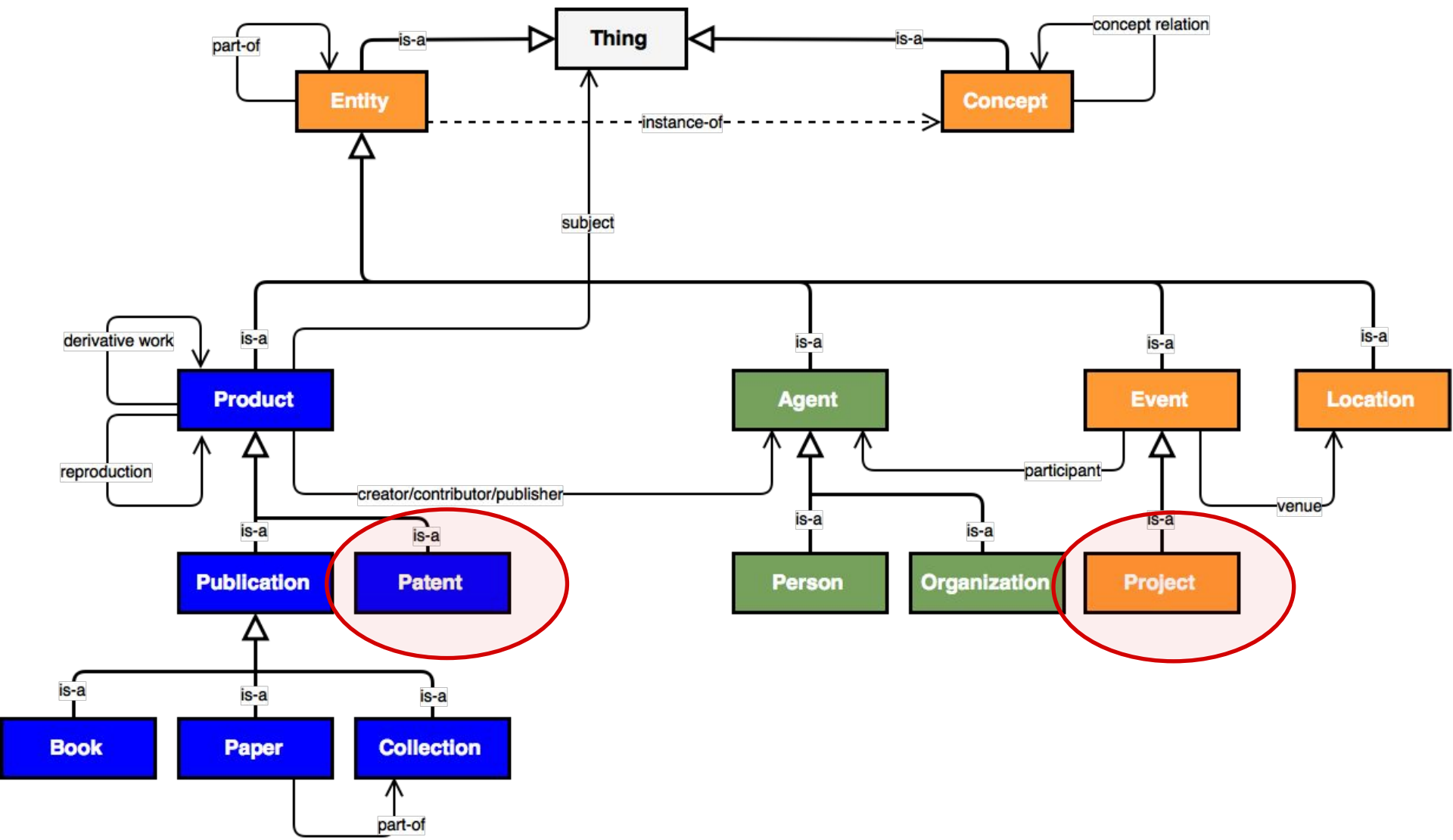
type=Work and derivative-work=\$1 and \$1. type=Work and \$1.title="The Adventures of Huckleberry Finn"



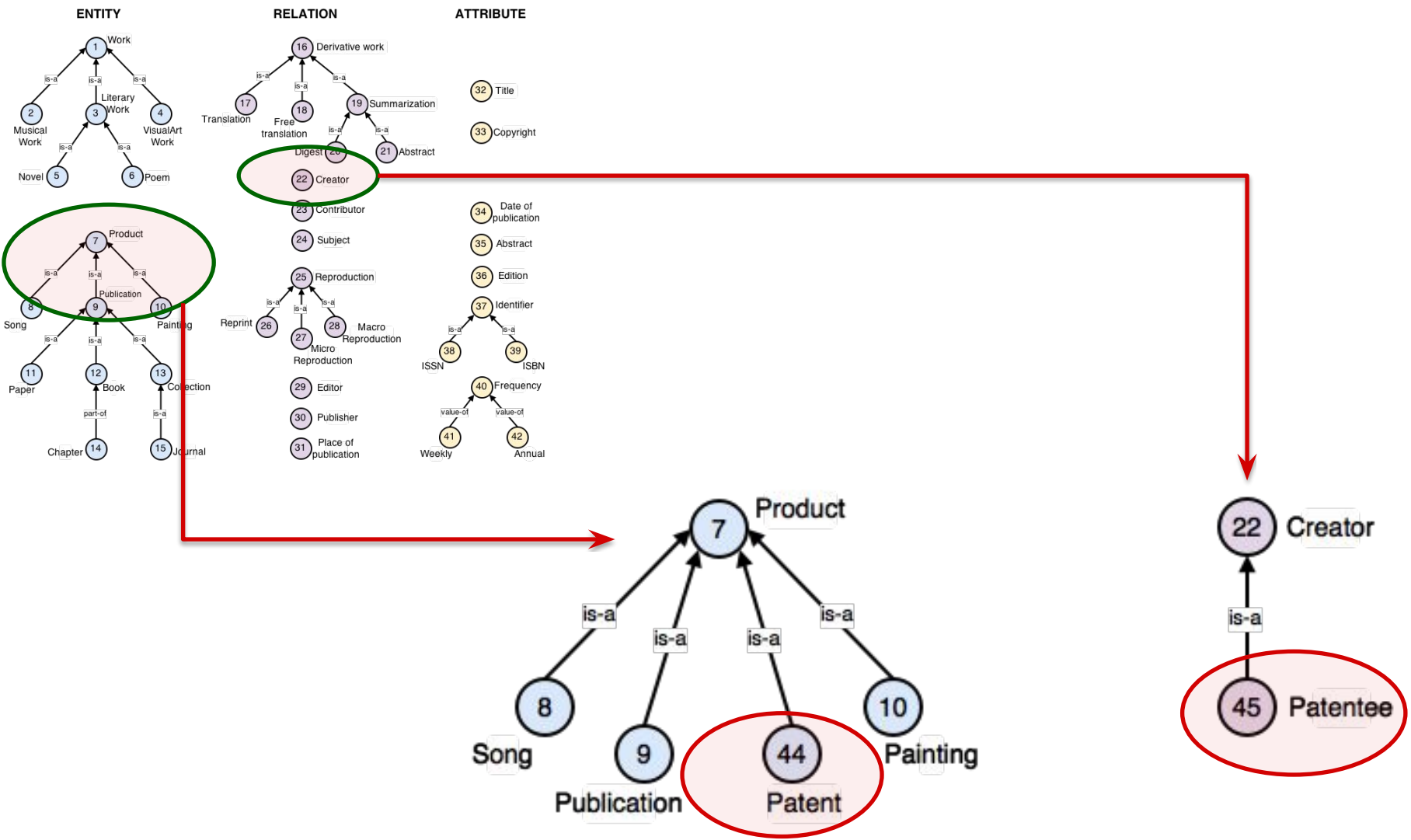
Digital University: data sources knowledge graph



Digital University: customizing the entity types



Digital University: customizing the terminology



Digital University: offering expressive search

Find documents where property x denotes an entity of type y with property $z = \$$

The screenshot shows the 'Entity Base Explorer' interface. On the left is a navigation sidebar with options like 'Entity Base', 'dataset-import', 'Etype Explorer', 'Knowledge Base', 'Home Page', 'Digital Library', and 'UserBase Management'. The main area contains a search query builder with two rows of criteria:

Subject	Person	Gender	EQUAL	6496	-
Subject	Person	Place of birth	EQUAL	Stagira	-

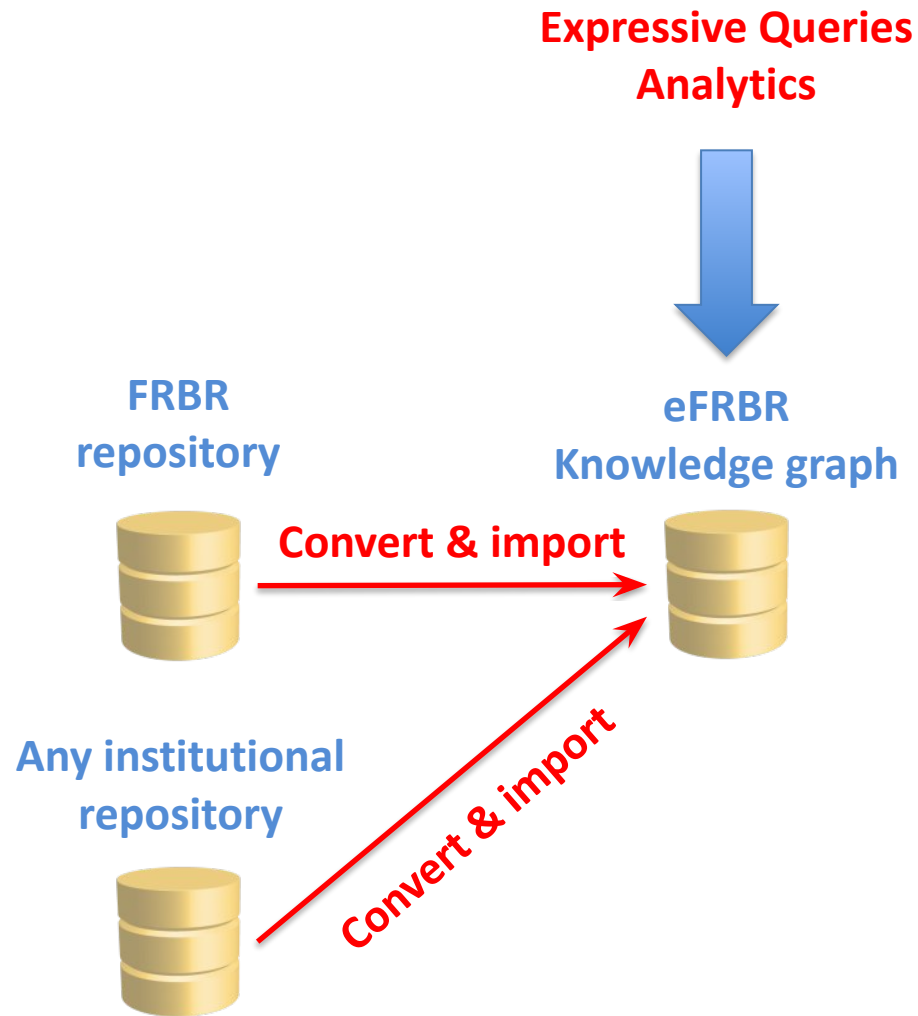
Below the criteria are input fields for 'Attribute Name', 'Select Etype', and 'Select Operator', along with a 'Search' button. The results pane on the right shows a list of documents:

- 74361 Vincenzo Grandi (?), Aristotele
- 74376 Ulrico di Strasburgo, un maestro nel citare: nuove evidenze del ricorso alle opere di Alberto il Grande in De summo bono IV 2 8-14
- 74350 Il libro Lambda della Metafisica di Aristotele

At the bottom right, there are 'Tabular' and 'Compact' view options.

- Show graphically the trend of works by department and by year
(it needs to use the authors' affiliation)
- Show graphically the trend of works which are about European organizations
(it needs to group and count products by subject, where the subject is any organization seated in any location part of Europe)

How to support queries for existing systems



Conclusion

eFRBR: An entity model for FRBR

- Developed ontologically sound entity model based on FRBR.
- Defined the terminology using the DERA methodology.
- Supported wide range of expressive queries.
- Answered queries by exploiting a knowledge graph.
- Validated the approach in University of Trento use-case.
- Plan to develop a software solution to manage and exploit knowledge assets.

**Looking for
collaboration
in
Digital University**



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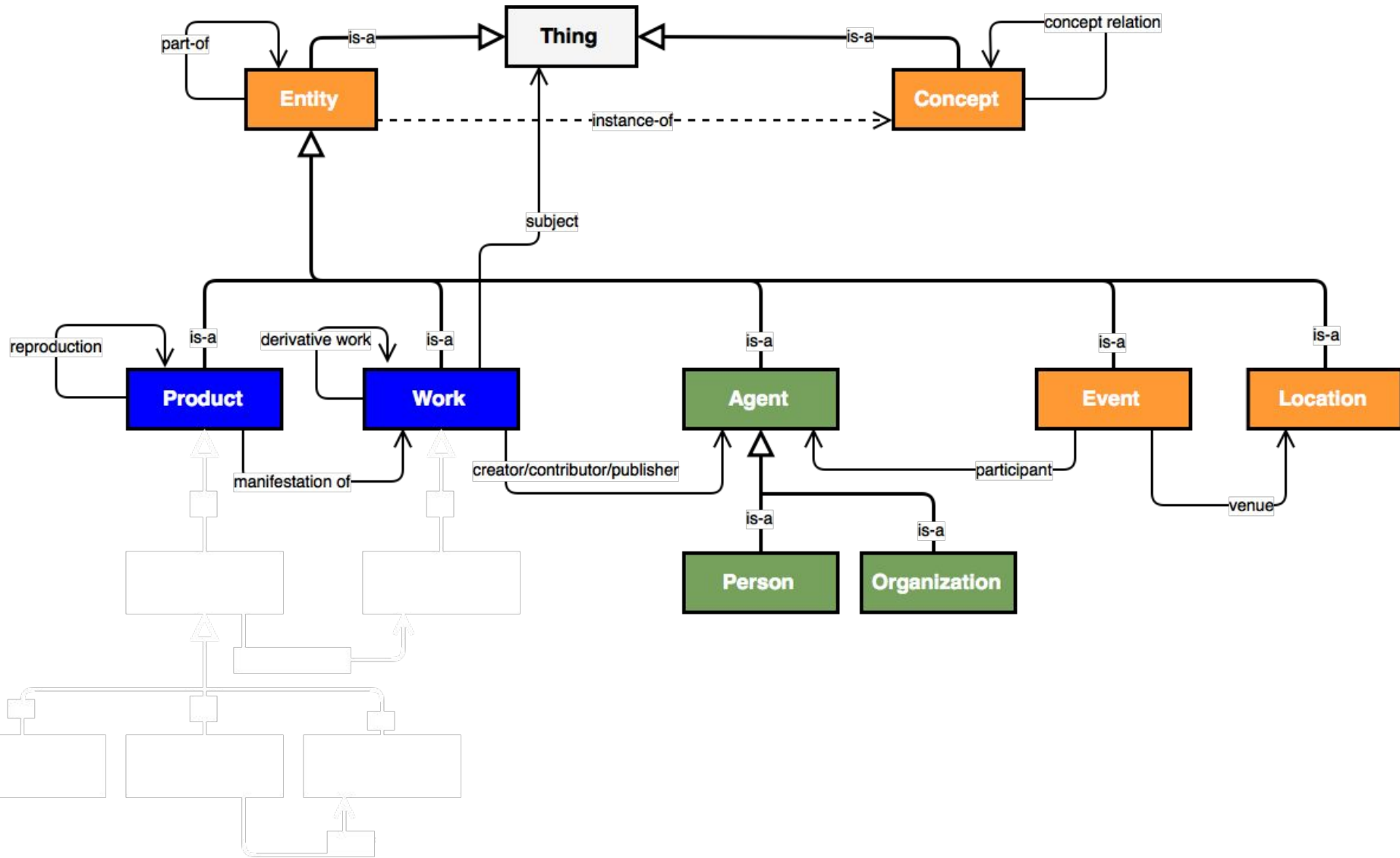
fausto
[at]disi.unitn.it



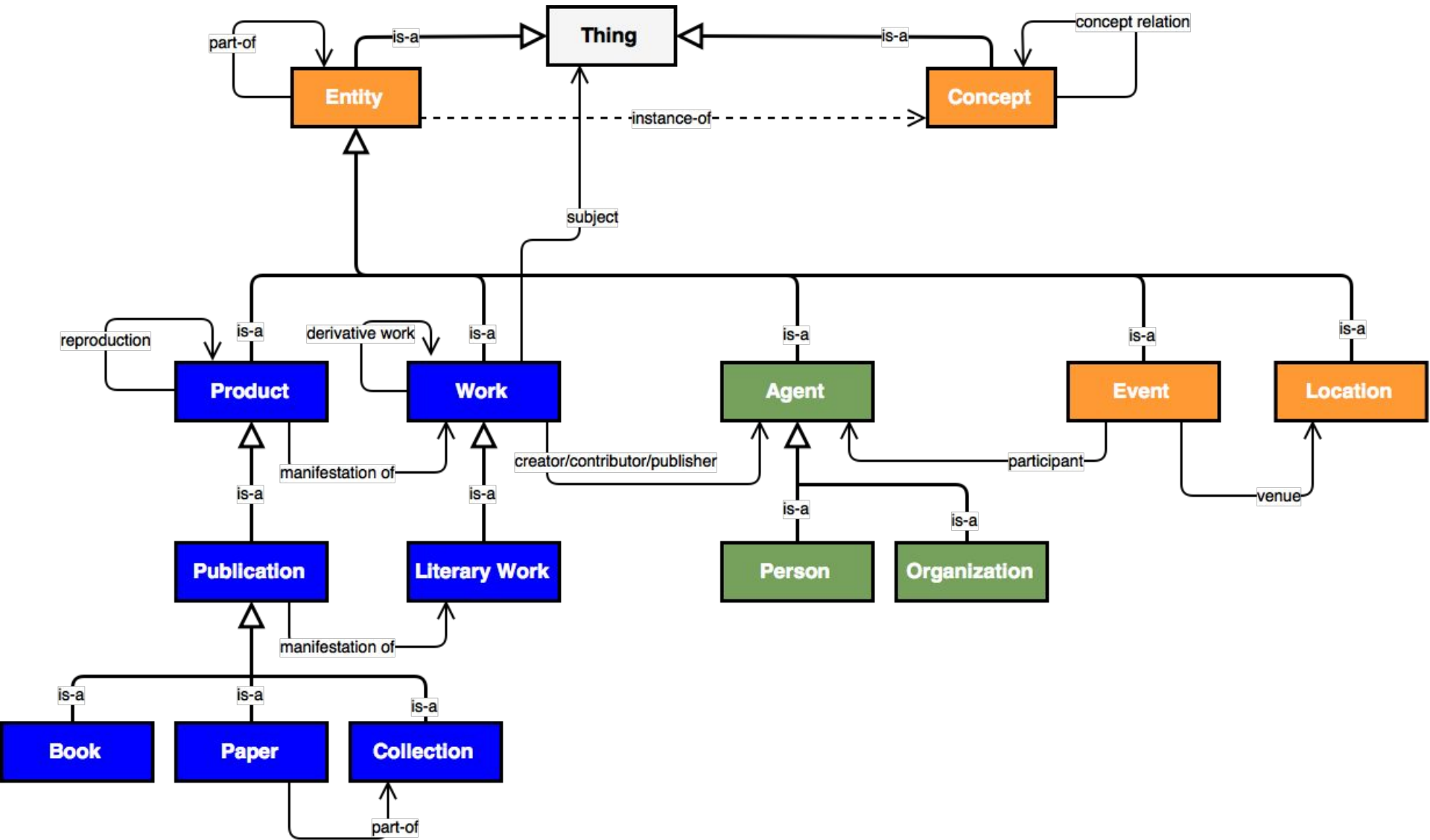
stella.margonar
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Thank you

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