



golden
agents

Golden Agents

Modeling Provenance and Uncertainties in the Use of Archival
Sources of the Dutch Golden Age

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Thursday, March 31, 2022 - RSA Dublin 2022



@goldenagents

Golden Agents: Creative Industries and the Making of the Dutch Golden Age

(Jan 2017 – Dec 2021/22)

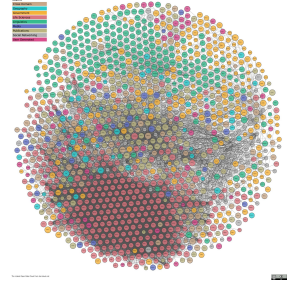
NWO-Large Infrastructure Project



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The project



Analyzing

- interactions between **various branches** of the creative industries
- interactions between **producers and consumers** of creative goods

Tools / interfaces

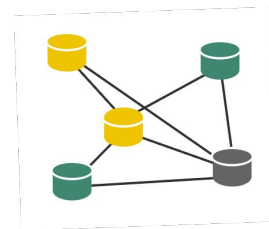
- Building a 'semantic web for the Dutch Golden Age'
- A tool for *Entity Linking* + Agent technology (AI)



Data / infrastructure

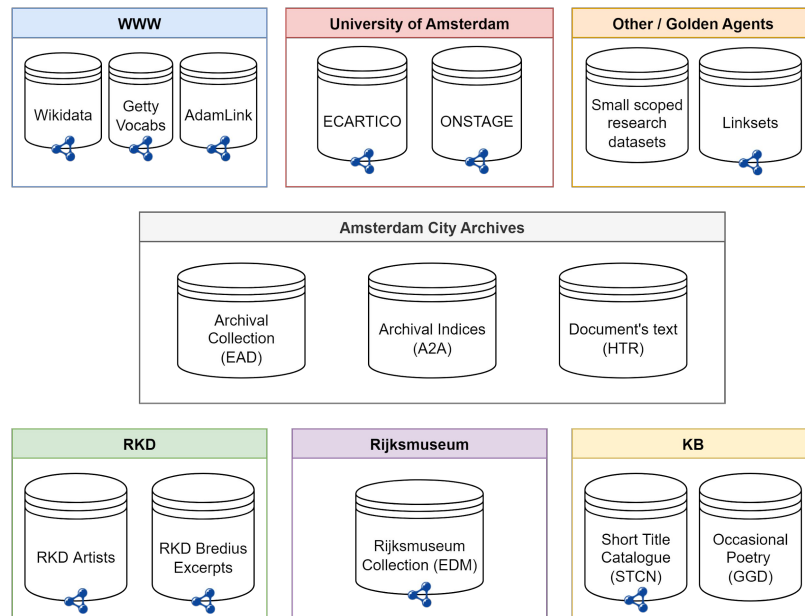
- Heterogenous existing and new datasets in Linked Open Data of the Dutch Golden Age
- Incorporating these dynamic interactions as *storylines* and in an event-based *ontology*

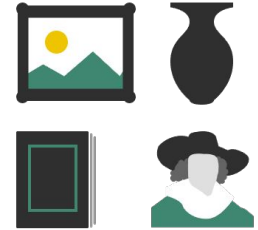
Infrastructure and data



How are data structured in the project?

- Datasets in **data silos**, organized by content owner
- **Interpretation** separate from original data, as extra layer/dataset
 - Linksets
 - Within or between datasets
 - 'Reconstructions'
 - Allows for conflicting views/statements
- **Provenance**
 - Link with original source/scan always clear (Provenance chain)
 - Keep track of transformations





Archival sources - Production

Datasets providing information on *production* of cultural goods

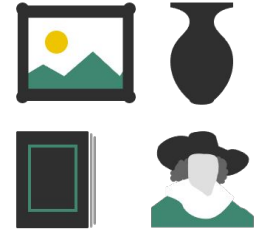
- Images / cultural heritage objects - Rijksmuseum
 - Listing *painter* or *creator*
- Images - RKD Netherlands institute for art history
 - Listing *painter* or *creator*
- Books / written material - KB Dutch National Library
 - Listing *author*, *contributor*, *illustrator* and *printer/publisher*

RIJKS MUSEUM

RKD NETHERLANDS
INSTITUTE
FOR ART HISTORY



KB
Koninklijke Bibliotheek



Archival sources - Consumption

Datasets providing information on *consumption* of cultural goods

- List of items in Probate inventories - Amsterdam City Archives
 - Items held by an *owner*
- Images - RKD Netherlands institute for art history
 - People *portrayed* or described as *owner*
- Books / written material - KB Dutch National Library
 - Books written *for* someone

X Gemeente
X Amsterdam
X Stadsarchief

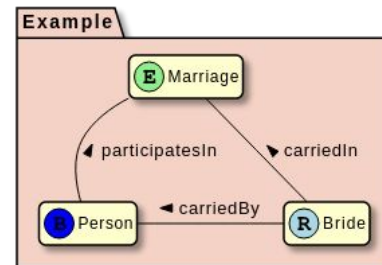
An ontology for Archival Sources

Ontology for archival sources: ROAR++

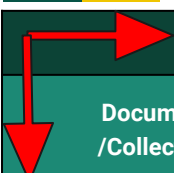
- **Reconstructions and Observations in Archival Resources**
- Model what you **observe**, **interpret** and **infer**
- Then, you make a **reconstruction** based on two or more **observations**

Levels:

1. Collection (cf. **EAD / RiCO**)
2. Observation: Content (from **HTR/transcription**)
3. Observation: Direct interpretation (cf. traditional **index**)
4. Observation: Indirect interpretation
5. Reconstruction into one 'individual concept' (cf. **thesaurus/biography**)



Modules with levels of detail and uncertainties



	Min. prov.	Detailed prov.	Uncertainties
Documents /Collections	Documents grouped under certain criteria.	All the processes (creation/modification/digitization) undergone by a collection.	Who's created them? Are they trustworthy? Are they originals or copies/transcriptions?
Observation: Content	Record and its mentions/descriptions of individuals/roles and/or their types.	Annotate where the mentions/descriptions are in the text and/or scan.	Have the mentions/descriptions been modified/adapted/translated in the process? Errors introduced?
Observation: Direct Interpretation	Events and roles/objects directly observed in each document.	Break down the content into parts and connect to the observed entities and their properties	Are entities, types and properties correctly identified? Are there ambiguities? Could the observation be untrue? Uncertainty level can change.
Observation: Indirect Interpretation	Events and roles/objects that can be indirectly inferred.	Which extra events, individuals and properties can be extracted from the ones already extracted or from the original content.	What type of inferencing? Probabilities involved.
Reconstruction	Several observations can be combined to an individual concept through time.	Which specific properties were used for disambiguation.	Is the provided information enough for disambiguation? How accurate is the disambiguation process?

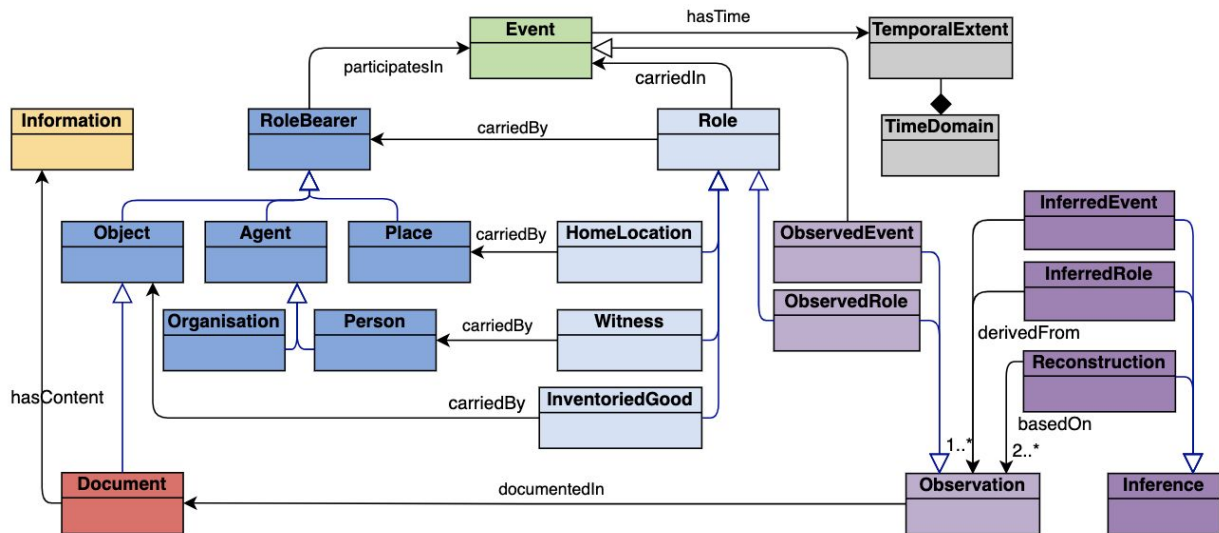
ROAR++

Information within Documents

(e.g. registries) mention entities (e.g. **RoleBearers** as persons or places) **observed** in a context (e.g. groom or address).

Reconstructions are entities observed in more than one **Document**.

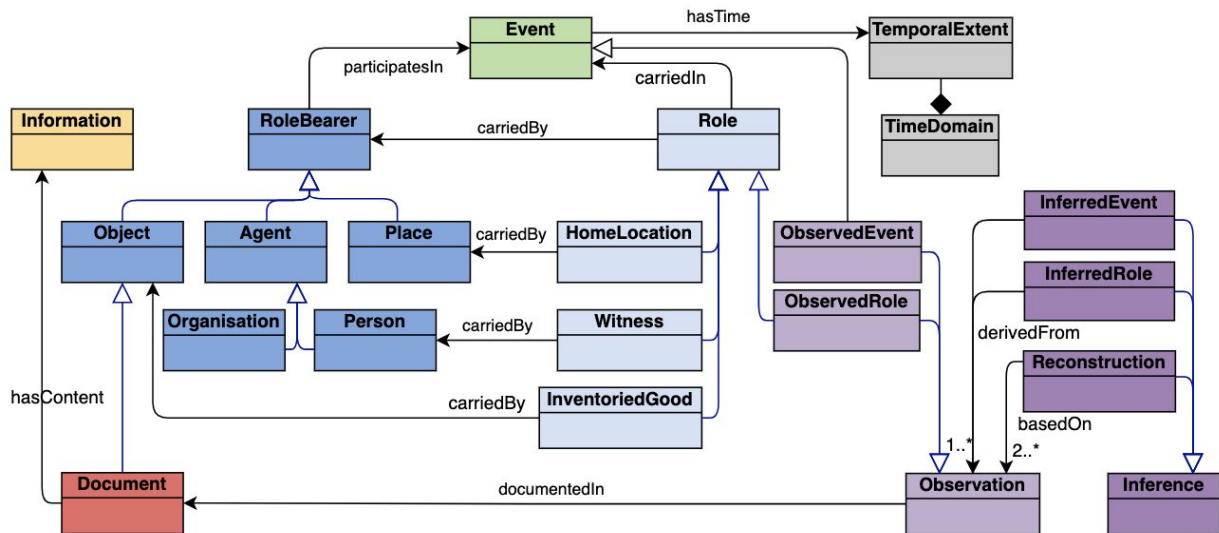
Inferences are not explicitly mentioned in a **Document**, but are derived from other **Observations**.



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The **Role** class

- Storing **perdurant information**
- Allows for inclusion of information such as someone's age
- Connect to an **'individual concept'** (umbrella concept)



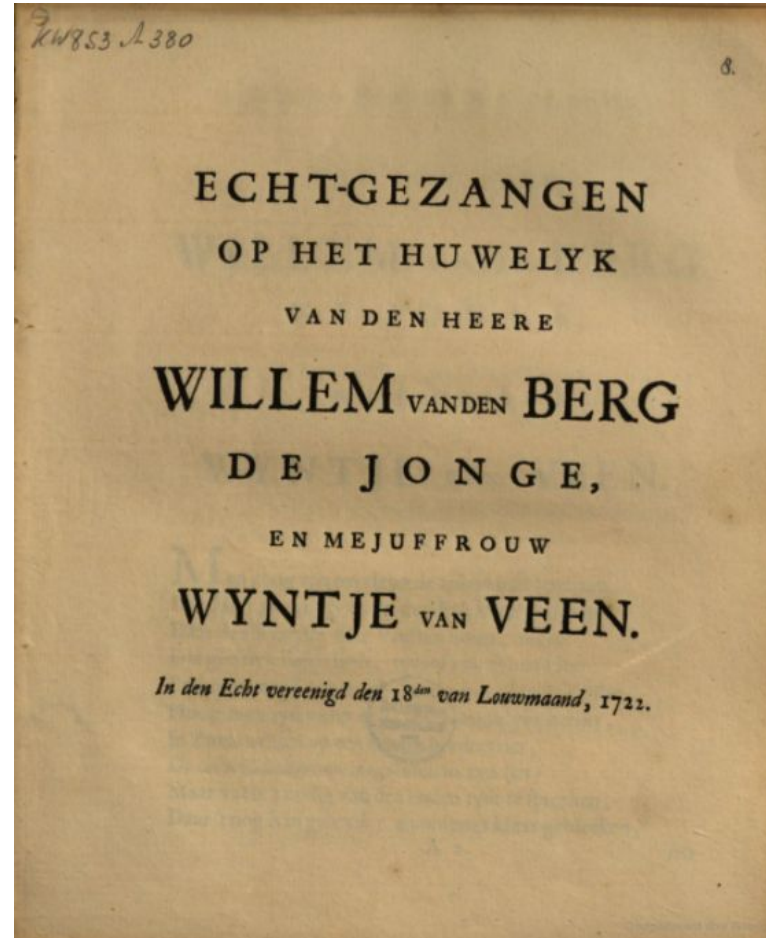
Use case: Occasional Poetry

Marriage poems

- Two poetry collections on two marriages:
 - 1717 - Huwelykszangen, ter bruilofte van den heere **Pieter Hoos**, en mejuffrouw **Wyntje van Veen**; in den echt vereenigt den 23sten van bloeimaand, 1717.
 - 1722 - Echt-gezangen op het huwelyk van den heere **Willem van den Berg** de jonge, en mejuffrouw **Wyntje van Veen**
- Various authors, most likely family/friends, or professional writers

Let's focus on the life of this Wyntje van Veen...


<https://data.bibliotheken.nl/id/nbt/p189132183>






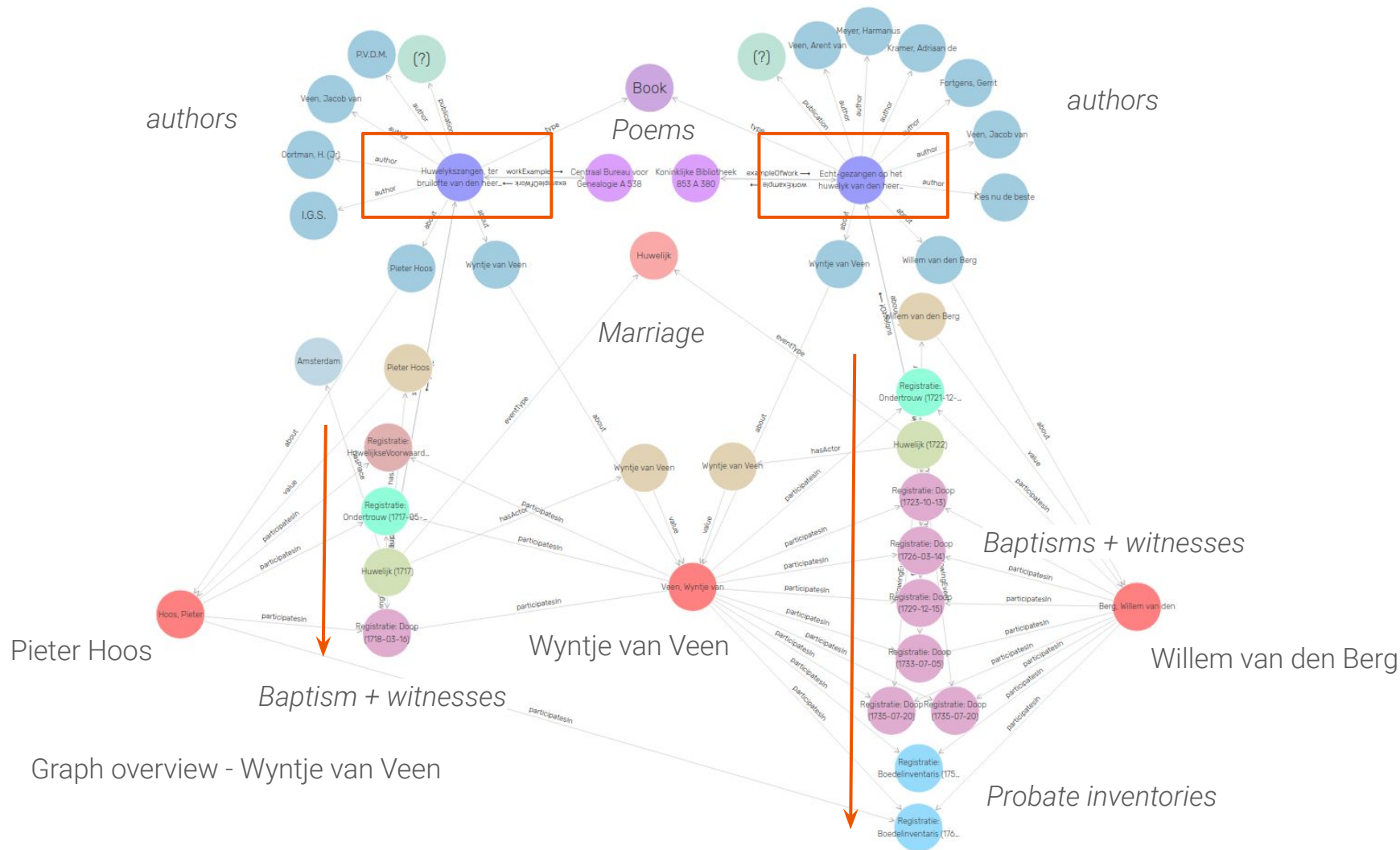
Events - Storyline of 'Wyntje van Veen'

First marriage with **Pieter Hoos**

- 
- 1717-04-08 Prenuptial Agreement (I)
 - 1717-05-07 Notice of Marriage (I)
 - 1717-05-23 Marriage (I)
 - Poem
 - 1718-03-16 Baptism (Cornelia)
 - 1718-12-07 Death (husband)

Second marriage with **Willem van den Berg**

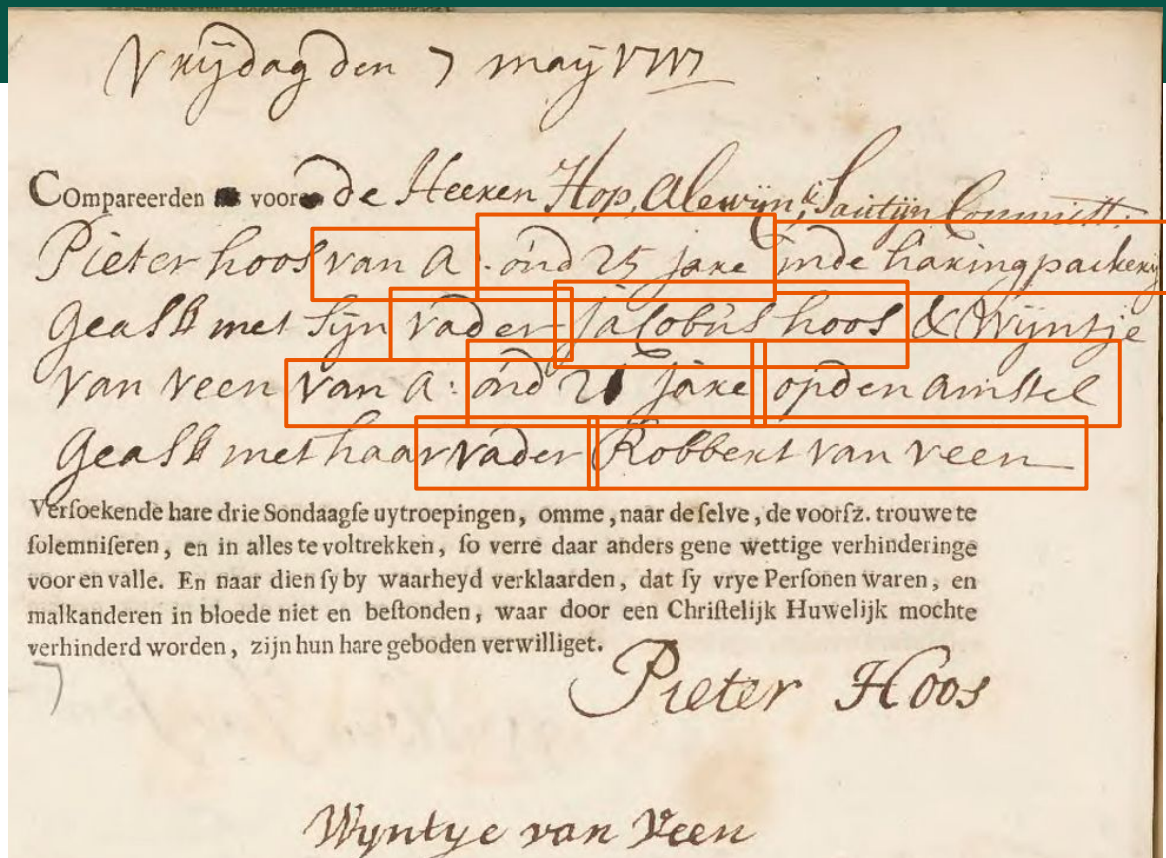
- 
- 1721-12-31 Notice of Marriage (II)
 - 1722-01-18 Marriage (II)
 - Poem
 - 1723-10-13 Baptism (Willemina Cornelia)
 - 1726-03-14 Baptism (Robbert)
 - 1729-12-15 Baptism (Willem)
 - 1733-07-05 Baptism (Elizabeth)
 - 1735-07-20 Baptism (Wijntie + Willem Jan)
 - 1758-04-29 Death (husband)
 - 1759-11-01 Probate inventory (husband)
 - 1765-08-06 Death (her)
 - 1765-10-17 Probate inventory (her)



Zooming in on one event

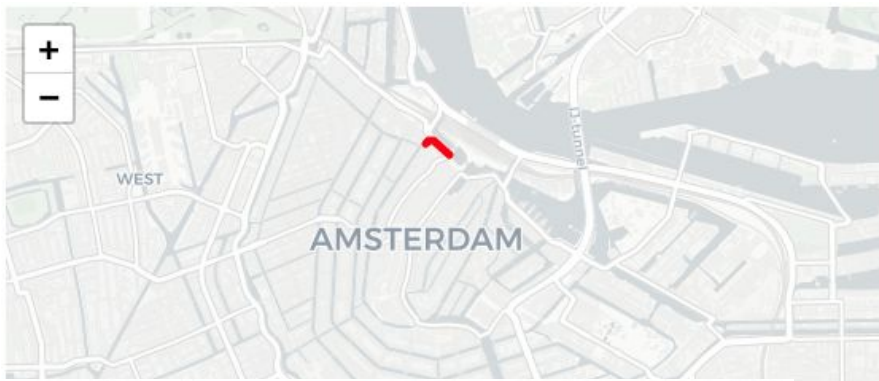
Wyntje van Veen in the role of **Bride**

- Relation observation
 - Jacobus Hoos (father)
 - Robbert van Veen (father)
- Age observation
 - 25 years old
 - 21 years old
- Origin observation
 - From Amsterdam
- Address observation
 - In the Haringpackerij
 - Op den Amstel

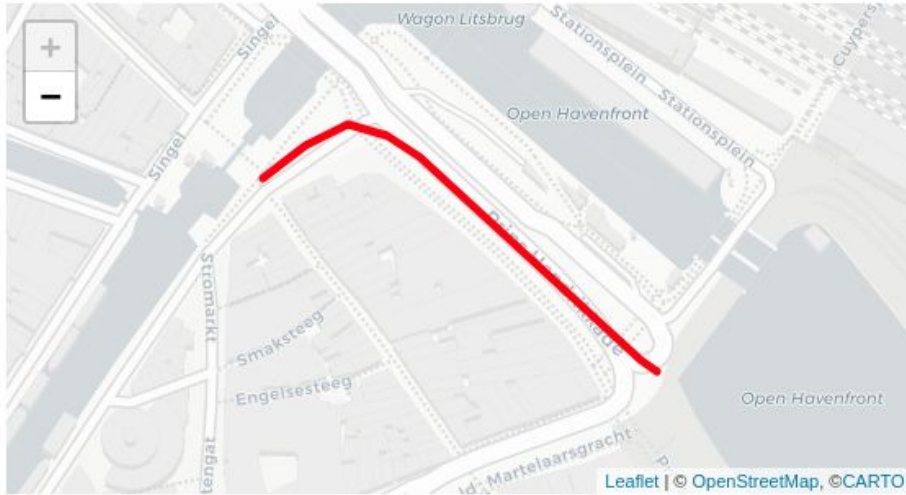


Notice of Marriage (1717-05-07)

<https://archief.amsterdam/indexen/deeds/989339a5-1215-433f-99b1-765c934b33b4>



- Which can be connected to external thesauri or other datasets (if available)
- This extra information helps later on in the disambiguation / reconciliation process



Haringpakkerij
<https://www.adamlink.nl/geo/street/haringpakkerij/5676>



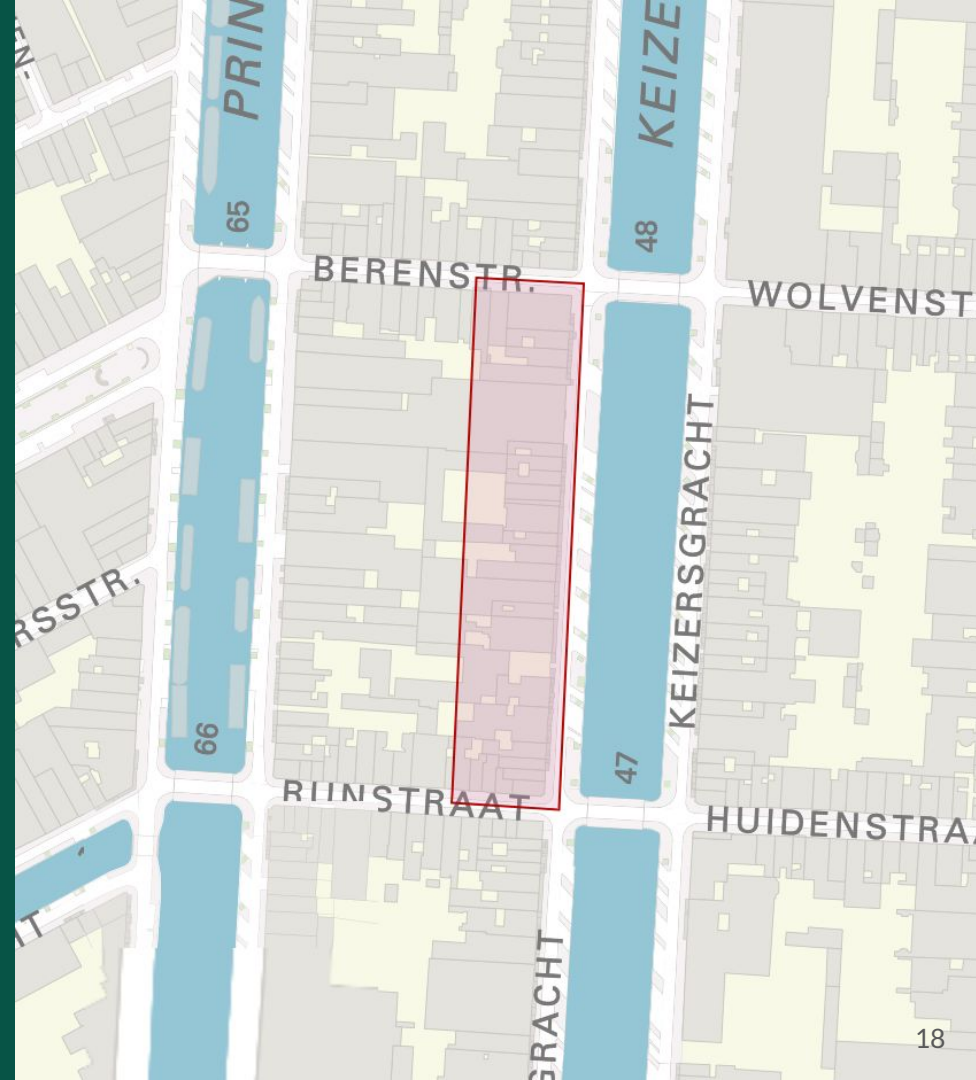
Op den Amstel
<https://www.adamlink.nl/geo/street/amstel/135>

Geometry

De Drie Spiegels

Keizersgracht, tussen Runstraat en Berenstraat

```
MULTIPOLYGON (((4.88426698204437 52.3688668168224,
4.883766565347695 52.36888701299711, 4.883766565347697
52.36888701299713, 4.883768866803108 52.36891049171032,
4.883881872342098 52.37038545965837, 4.883881872342148
52.37038545965902, 4.884375841607252 52.37036847182889,
4.884382 52.370368, 4.884267 52.368867, 4.88426698204437
52.3688668168224))), ((4.8843774612369 52.37036841612908,
4.884382023766308 52.37036825922159, 4.884382023766306
52.37036825922156, 4.884382 52.370368, 4.8843774612369
52.37036841612908)))
```

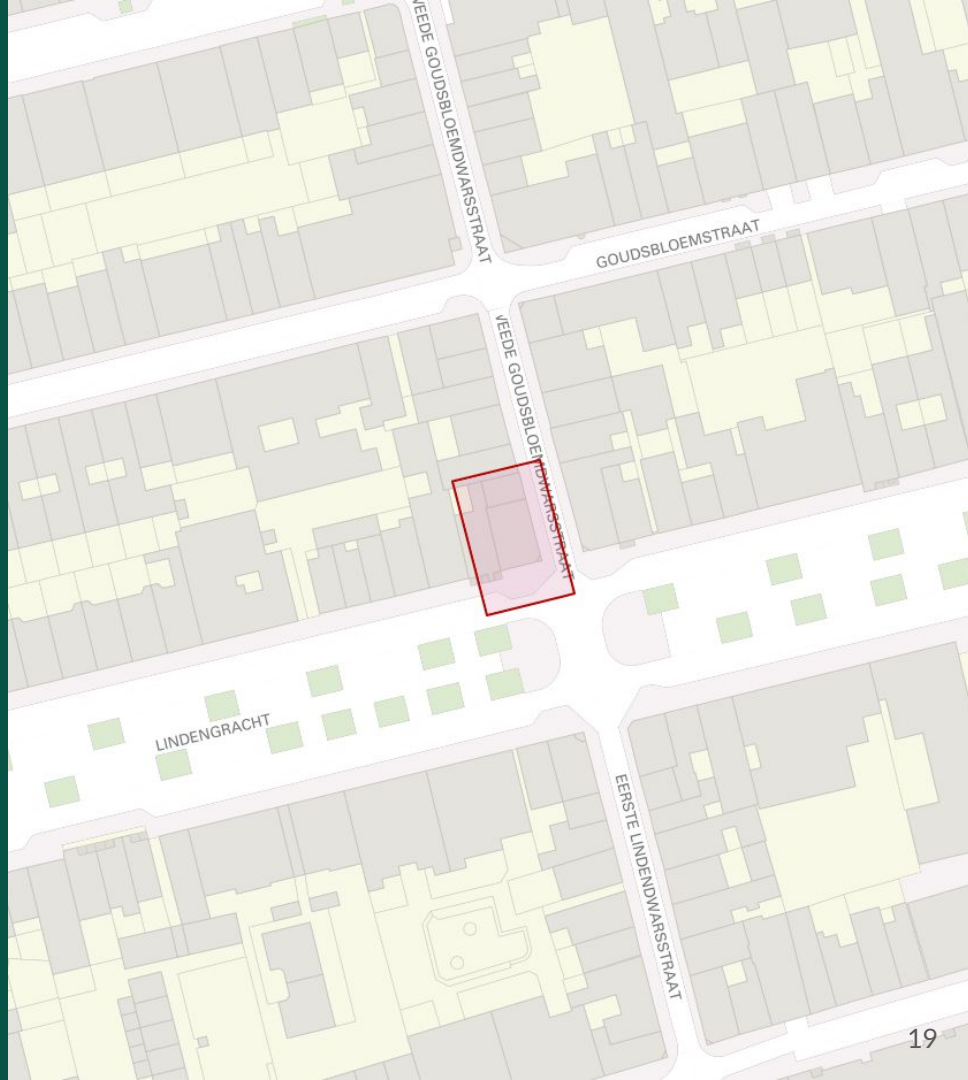


Geometry

De Kat in de Wijngaert

Lindengracht (NWZ), westhoek Tweede
Goudsbloemdwardsstraat

POLYGON ((4.884248428951326 52.38023277051681,
4.88422944809281 52.38022987392942, 4.8842294478
52.3802298739, 4.88404455278401 52.38020207331837,
4.883965250977025 52.38039239765514, 4.88416914386645
52.38042305472052, 4.884248428951326
52.38023277051681))





More data on *consumption* of cultural goods

Registration of Probate inventory (1759-11-01)

- Listing the belongings in the household of Wyntje van Veen and Willem van den Berg
- Linnen, silverware, paintings, books, stocks etc.

Example of:

- Painting by Paulus Potter
- Book by Jacob Cats

<https://archieff.amsterdam/indexen/deeds/a3cb51cc-3288-50ee-e053-b784100a6caf>



4. Een stuk met Twe Beesties in Een Lantschap van P. Potter, 65:-

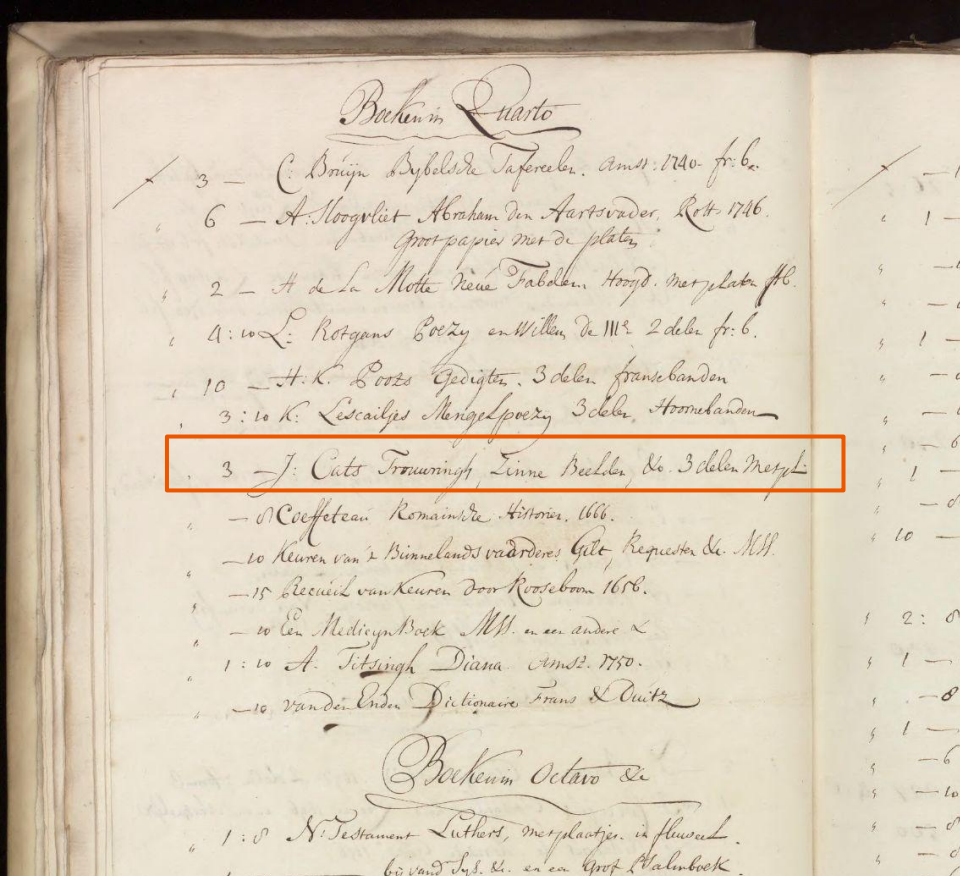
[=4. A piece with two animals in a landscape by Paulus Potter, 65 guilders]

1788.	16	Julijf. Tapatie van de Schilderij door J. H. Quinkhard,	
		Voor Kamer	
11.		Een Kerkie in de Manier van Steenwijk	15:-
12.		Een Landschap met Beelden, s. Beesties van Philip Wouwerman	125:-
13.		Een Stel Watertie met Schepen van Lapelle	30:-
14.		Een Stuk met Twe Beesties in Een Lantschap van P. Potter	65:-
15.		Een Stuk van P. Boudewijns	100:-
16.		Een Geselschap van Twe Beelden in de Manier van Hieres	20:-
17.		Een Vrolijk Geselschap van Van Dijk	30:-
18.		Een Kerkie van Saenredam	20:-
19.		Een Landschap van Jan van Huysum	25:-
20.		Een Smits Winkel na G. Metz	25:-
21.		Een Landschap van van Huysum synde een Weerge van N. G.	25:-
22.		Een Geselschapie van Bieke	15:-
23.		Een Wintertie van Philip Wouwerman	35:-
24.		Een Landschapie van Jan Houckeron	12:-
25.		Een Brabants Landschapie met Beelden en Beesties, van Boudewijns	25:-
26.		Een Kerkie met andere gebouwen, van Jan van Huysum	150:-
27.		Een Landschapie met Beelden s. Beesties van Boudewijns synde een Weerge van N. G.	25:-
28.		Een Landschapie van Jan Houckeron kinnde	

4. Een Stuk met Twe Beesties in Een Lantschap van P. Potter 65:-



3 - : J Cats Trouwringh, Zinne Beelden & 3 delen met pl.
[=Jacob Cats' Wedding ring, Emblems in 3 parts with pictures]



3 - J. Cats Trouwringh, Zinne Beelden, &c. 3 delen Met pl.



More on these storylines

Conceptual model on 'Evidence based Storylines'

- Van den Heuvel, C., & Zamborlini, V. (2021). Modeling and Visualizing Storylines of Historical Interactions. Kubler's Shape of Time and Rembrandt's Night Watch. In *Linking Knowledge* (pp. 99-141). <https://doi.org/10.5771/9783956506611-99>
- Mapping to CIDOC-CRM: <https://ontome.net/project/26>

Contact



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