

SEMANTIC WEB AND SCHOLARLY EDITIONS: WHERE ARE WE? TOWARDS A PHILOLOGICAL WEB OF DATA

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ATNU Virtual Visiting Speaker series

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3. A tentative state-of-the-art
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 2. Genetic networks and GENO
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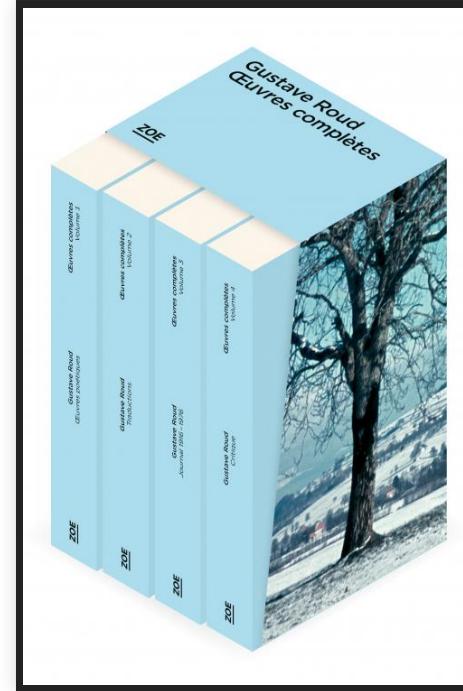
BACKGROUND

Gustave Roud, « Œuvres complètes »

Projet FNS, 2017-2021

Direction : Claire Jaquier et
Daniel Maggetti

**Collaborateurs et
collaboratrices** : Alessio
Christen, Bruno Pellegrino,
Elena Spadini, Julien Burri,
Raphaëlle Lacord



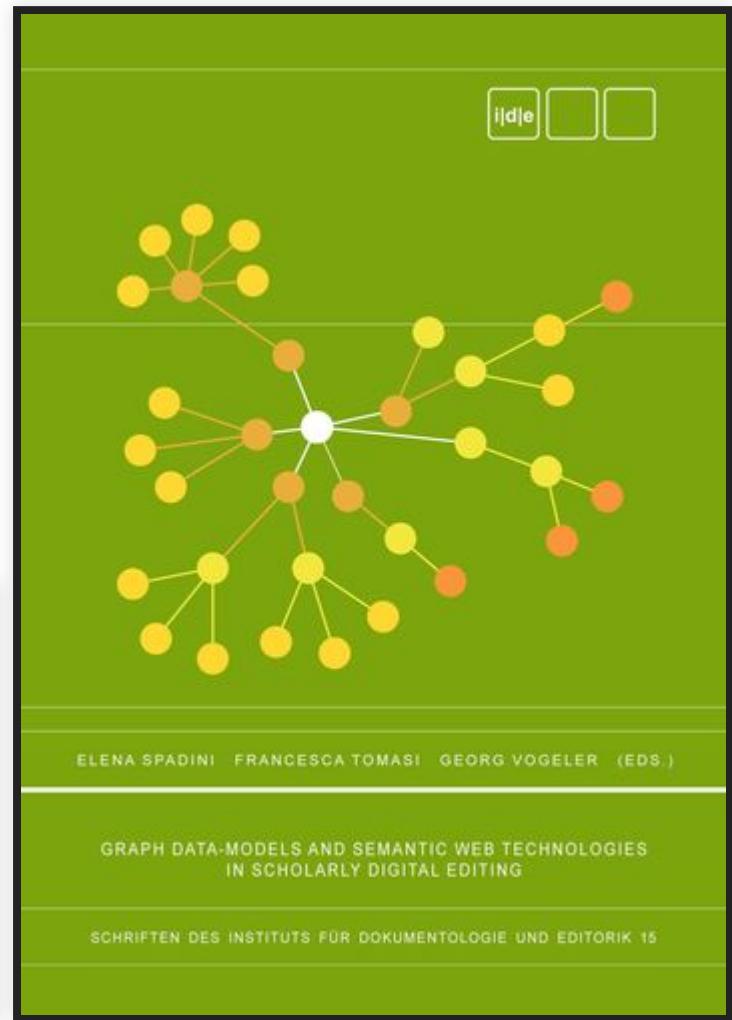
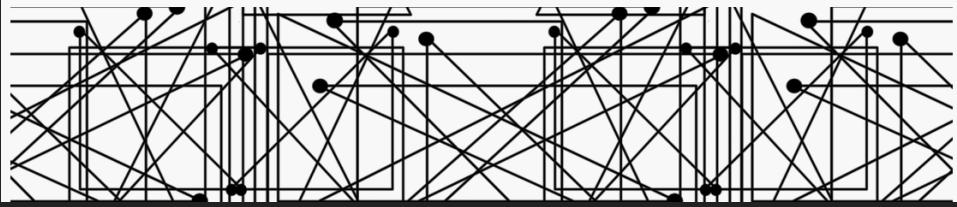
Gustave Roud. Textes & Archives

Archives Recueils Parcours Biographie Recherche

À propos Technical documentation

Workshop on Scholarly Digital Editions, Graph Data-Models and Semantic Web Technologies

Université de Lausanne, 3-4 June 2019 | #graphSDE2019



WHAT IS A SEMANTIC EDITION

WEB OF DATA

From web of documents to **web of data**, for humans and **machines**.

Tim Berners-Lee and collaborators in 2001.

Statements expressed in **RDF** triples (subject, predicate, object).

URIs, unique identifiers for resources (persons, concepts, books, web pages, etc.), can be used at each position of the triple.

SEMANTIC EDITION

- uses **persistent URIs** to identify resources and the relationships between them [...];
- uses **existing ontologies** for the organization of information [...];
- serves data through **content negotiation** and makes them searchable through a **SPARQL** endpoint equipped with a graphical interface.

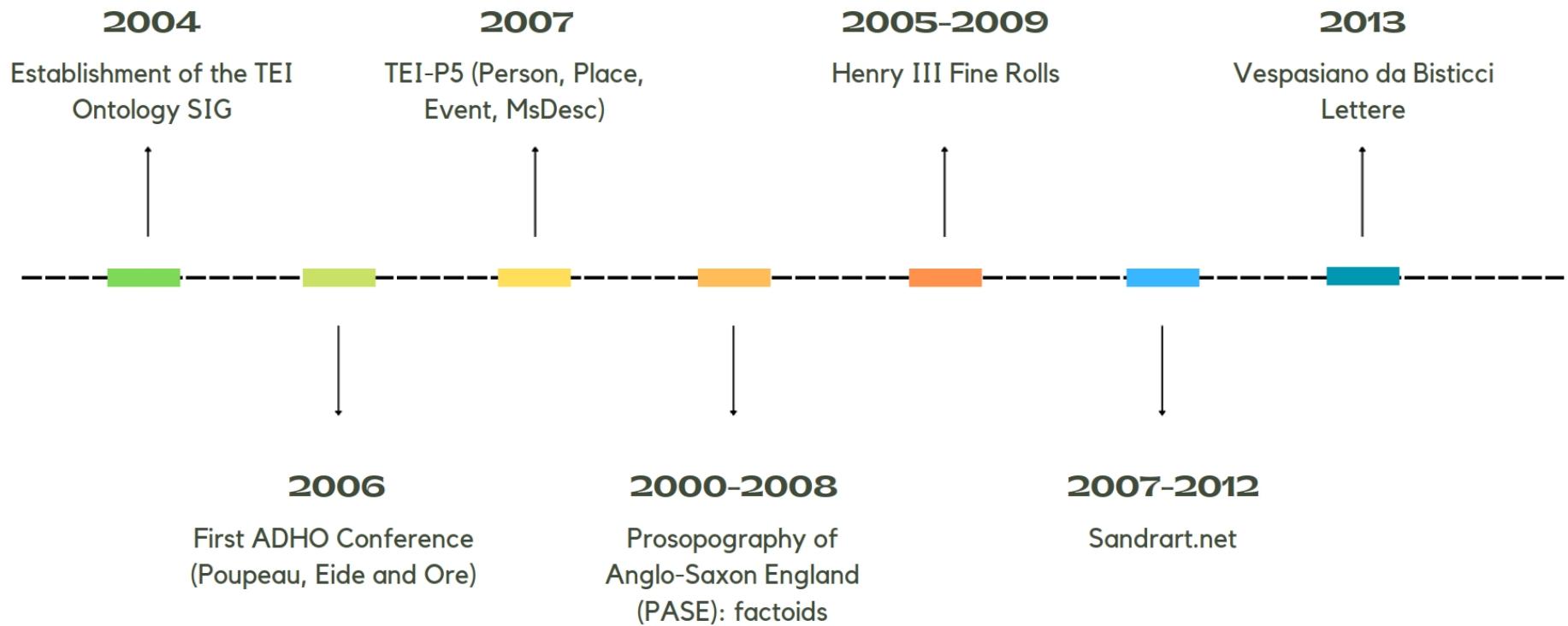
<http://projects.dharc.unibo.it/bufalini-notebook/introduction> (highlighting is mine)

Daquino, M., Dello Buono, M., Giovannetti, F., & Tomasi, F. (2020). Paolo Bufalini, Appunti (1981-1991) [Semantic Scholarly Digital Edition]. Digital Humanities Advanced Research Centre (/DH.arc),

<https://doi.org/10.6092/unibo/amsacta/6415>

A TENTATIVE STATE OF THE ART

THE FIRST DECADE OF SW TECHNOLOGIES FOR EDITIONS



EXTENSION OF INDICES

“An increasing number of digital scholarly editions use Semantic Web technologies to solve naming issues. The most prominent method is the extension of classical indices”

Vogeler 2019

Goals

- identify authorities, including implied ones (human and machine inferences)
- express unambiguously the relationships between them

Impact on search functionalities (example of "the wife of")

See Eide and Ore 2006, Ciula et al. 2008, Tomasi 2012

EXAMPLE OF EXPRESSING RELATIONSHIPS BETWEEN ENTITIES

The screenshot shows a user interface for 'Sphaera CorpusTracer'. At the top, there is a dark green navigation bar with the following items: 'Sphaera CorpusTracer' (highlighted in white), 'Corpora', 'Parts', 'Persons', 'Places', 'Terms', 'Search', 'Ontology', 'Visualizations ▾', and 'About'. Below the navigation bar, the word 'Home' is displayed in blue. The main content area features two entities: 'Person' (represented by a person icon) and 'Book' (represented by a book icon). A dropdown menu is open between them, listing five relationship types: 'is author of', 'is translator of', 'is publisher of', 'is printer of', and 'is involved in creation of'. The 'cancel' button is visible at the bottom right of the menu.

Project: "The Sphere. Knowledge System Evolution and the Shared Scientific Identity of Europe" PI: Prof. Dr. Matteo Valleriani; Data Science: Hassan El-Hajj; Website: ANIKA MERKLEIN
<http://db.sphaera.mpiwg-berlin.mpg.de/resource/:search>

EXAMPLE OF EXPRESSING RELATIONSHIPS BETWEEN ENTITIES

The screenshot shows the Sphaera CorpusTracer interface with a navigation bar at the top. The main area displays a query builder for expressing relationships between entities.

The query consists of two main parts:

- Top Path:** Person (Person icon) — creator of —> Adaption (Adaption icon).
- Bottom Path:** Adaption (Adaption icon) — contained in —> Book (Book icon).

A "cancel" button is located at the end of each path. A "WHERE" label is positioned between the two paths.

To the right of the paths, there is a search interface labeled "Find a Book:" with the input field containing "Tra|". Below the input field, a list of results is shown:

- Tratado da sphaera
- Trattato della Sphera
- Trattato della sphera

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<http://db.sphaera.mpiwg-berlin.mpg.de/resource/:search>

INTERPRETATION AND KNOWLEDGE CREATION

- separation of interpretation and source
- explicit the semantic

“An interpretation of the kind I have arrived at, has two distinguishing characteristics: first, **all statements** are, directly or indirectly, **linked to the text locations** they discuss; and second, all **categories** employed in the interpretation have been **explicitly defined**, and the interpretation is formulated in terms of these definitions. [...] The point of this is not that my interpretation of the metaphor is necessarily a good one. On the contrary; the point is that its possible weaknesses are being exposed [...] It is likely that this exposition will increase our **interpretations' robustness**.”

INTERPRETATION AND KNOWLEDGE CREATION

- separation of interpretation and source
- explicit the semantic

“Using this default [TEI] markup together with an annotation linking to an external ontology embeds data structures into the text of scholarly editions. [...] The editors have done their work: they created a digital representation of the source by scholarly standards including their interpretation of the facts which could be extracted from the archival documents in a way that the data representing these facts can be shared via the semantic web and still retraced to the source supporting their interpretation.”

INTERPRETATION, PROVENANCE AND KNOWLEDGE CREATION

“the description of a cultural resource cannot avoid to state the *provenance* of that description”

“la descrizione di una risorsa culturale non può esimersi dal dichiarare la *provenance* di quella descrizione”

Tomasi 2022, p. 84 (all translations are mine)

“There is no data without the interpretation that has generated that data”

“Non c’è dato senza l’interpretazione che quel dato ha generato”

Tomasi 2022, p. 61

“Attributing **context** is the action that typically, from a computational perspective, allows **data** to become **information** and information to become **knowledge**”

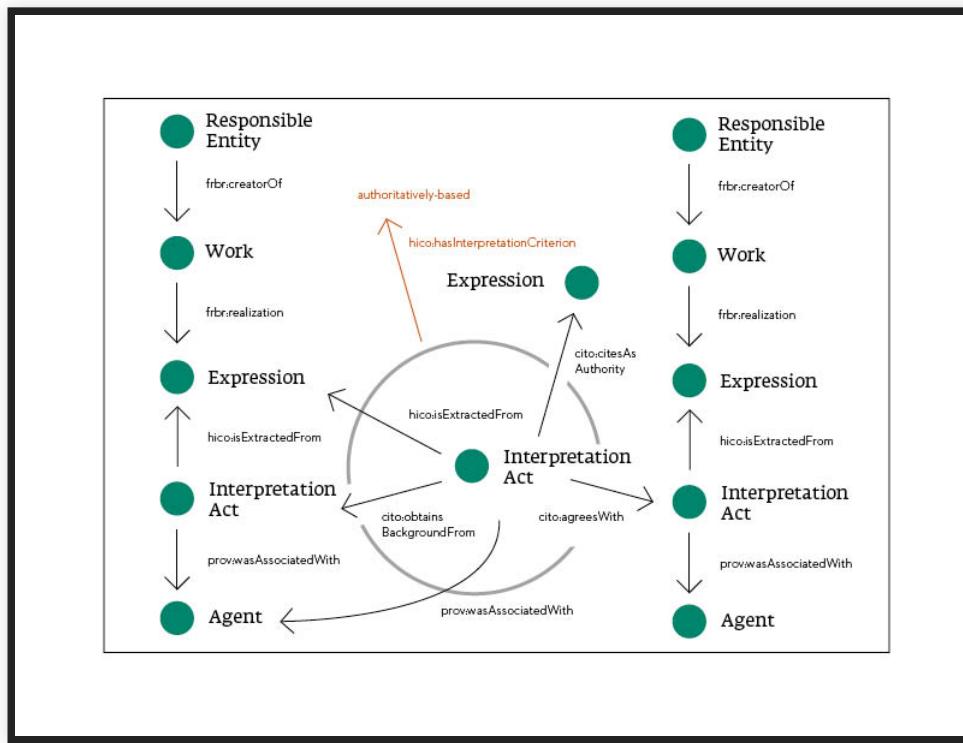
“Attribuire contesto è l’azione che tipicamente, dal punto di vista computazionale, consente ai dati di diventare informazione e all’informazione di diventare conoscenza”

Context, from archival science, means at least:

- creator
- provenance
- position in the hierarchy/graph

“Formalize the hermeneutic act and translate the information provided through markup into explicit, computable knowledge”

“formalizzare l’atto ermeneutico e tradurre in conoscenza esplicita e computabile l’informazione fornita attraverso il markup”



RESOURCES

Assertive vs philological **editions**

“In terms of Patrick Sahle’s text wheel (Sahle 2013:III,45-49), the assertive edition is the editorial practice dedicated to the ‘text as content’ perspective”

“assertive editions [...] are scholarly representations of historical documents in which the **information on facts asserted by the transcription** is in the focus of editorial work. They help the user/reader understand the text and use the information conveyed in the text as **structured data**.”

“I suggest calling this combined method ‘assertive editing’ to avoid the impression that this method can only be used by historians.”

Philological vs assertive editions

“The majority of scholarly editors, on the other hand, employ traditional methods of textual scholarship; they ponder complex **transcription problems**, evaluate **variants**, and include **textual materiality**.”

Vogeler 2019

(MORE OR LESS) SEMANTIC EDITIONS

First decade: Henry III Fine Rolls Project (history), [Sandrart.net](#) (art history), [Sharing Ancient Wisdoms](#) (text collection, classics), [Vespasiano da Bisticci Lettere](#) (Renaissance humanism, codicology).

Second decade: Symogih XML portal (history), [Geovistory editions](#) (history), [Digital Edition Publishing Cooperative for Historical Accounts](#) (history), [Paolo Bufalini's Notebook](#) (contemporary history, philology), [National Edition of Aldo Moro's Works](#) (contemporary history).

ONTOLOGIES USED IN THESE EDITIONS

Generic: [DCTerms](#), [FOAF](#), [CIDOC-CRM](#) (history), [FRBR](#) (philology), [Web Annotation Data Model](#).

Bibliography: [BIBO](#), [BIRO](#).

Context (interpretation and provenance): [HiCO](#), [PROV-O](#).

Document components and rhetoric: [DOCO](#), [DEO](#).

Citation: [C4O](#), [CITO](#).

Space and time: [Geo](#), [Geonames](#), [Time](#), [TI](#), [TVC](#).

Project specific ontologies.

OTHER POTENTIALLY INTERESTING ONTOLOGIES AND VOCABULARIES

HTR: [Segmonto](#).

Codicology: [MeMO](#), [Bibma](#) (legacy?), [CodiKos](#).

CRM world: [CRMinf](#), [CRMtex](#).

Philology (variants, witnesses relations, citations, intertextuality, etc.): [CAO](#), [GENO](#), [LAWD](#), [HuCit](#), [INTRO](#).

Generic: [NIE-INE Ontologies](#) (legacy).

HOW TO

“If scholars are to take full advantage of the potential that RDF/OWL provides for formalizing complex associations, it is crucial that the tool kit they use facilitates the editing process”

Ciula et al. 2008

XML to RDF: XSLT, [LIFT](#).

Ontology building: [Protege](#).

Research and publication environments: [GAMS](#), [Geovistory](#).

Encoding and annotation: [LEAF-Writer](#), [Recogito](#).

HUMAN CONSUMPTION

From text- to data-centric approach

“There is still a long way to go in the realization of applications that are able to wisely use data and return them to the user in the form of new knowledge. Consider that LOD are not originally designed for the user, but for processing by the machine.”

“ancora tanta strada c’è da fare nella realizzazione di applicazioni che siano in grado di utilizzare in modo sapiente quei dati per restituire all’utente sotto forma di nuova conoscenza. Partiamo dal presupposto che i LOD non sono pensati originariamente per l’utente, ma per l’elaborazione da parte della macchina.”

Tomasi 2022, p. 125

Interfaces: content-oriented navigation (indices, maps, timeline), multiple forms of representation (already in the pre-digital assertive editions), faceted search.

SPARQL endpoints: half of the editions reviewed, 4/9.

EXAMPLES

Digital Edition Publishing Cooperative for Historical Accounts
(DEPCHA), dir. by Georg Vogeler, Centre for Information Modeling –
Austrian Centre for Digital Humanities (financed by the The Andrew
W. Mellon Foundation), CC-BY 4.0. Permalink: [http://gams.uni-
graz.at/depcha](http://gams.uni-graz.at/depcha)

DEPCHA

Digital Edition Publishing Cooperative for Historical
Accounts

Collections



Project

Historical financial records provide rich and highly structured administrative sources, containing substantial amounts of individual information. This individual information is often not in the core of research interest. Instead, the records acquire their significance in aggregation of the single entries. Pure transcription does not cover the full range of dimensions of such a source: the linguistic/textual, the quantifiable and the semantic dimension. For research purpose, historical sources are subject to a transformation process towards (linked) information sources that can be used in various research scenarios. The Project DEPCHA, an Andrew W. Mellon funded cooperation of five US partners and the Centre for Information Modelling at Graz University, aims to link the knowledge domain of economic activities to historical accounting records. For this purpose the so-called Bookkeeping-Ontology is developed. DEPCHA creates a publication hub for digital editions on the web, converting multiple formats into RDF and publishing these alongside the transcriptions and allows the usage of various retrieval and visualization functionalities, as well as interoperability and reuse of information in the sense of Linked Open Data.

Collections

The following **16 projects** are published in DEPCHA.

Filter Collections

1296 Business Accounts Household Accounts State Accounts City Accounts Family Accounts Tax Accounts 1934

[Reset](#)

Annata SS. Pietro e Sebastiano 1485

Scope	1485 Napoli, Italy Italian
Source	Napoli, Archivio di Stato
Editor	Georg Vogeler / Ciro Romano / Antonella Ambrosio
Subject	Business Accounts
Description	Business Accounts of the monastery Santi Pietro e Sebastiano in Naples from the year... ▾

[🔗](https://gams.uni-graz.at/context:depcha.ssps) [https://gams.uni-graz.at/context:depcha.ssps](#)  354  0
 30.3.2023  0  0

[Dashboard](#)

[Collection](#)

City accounts of Lviv

Scope	1480 Lviv, Ukraine German
Editor	Michal Schmidt
Subject	City Accounts

Burgos Ledger

Scope	1558 Burgos, Spain Spanish
Editor	Naoki Kokaze / Satoru Nakamura / Takeshi Fushimi / Yusuke Nakamura
Subject	Business Accounts
Description	The Salamanca Company was from Burgos, Northern Spain, one of the main centers of... ▾

[🔗](https://gams.uni-graz.at/context:depcha.burgos) [https://gams.uni-graz.at/context:depcha.burgos](#)  52  46
 30.3.2023  0  0

[Dashboard](#)

[Collection](#)

Diary of Jeremiah White Graves

Scope	1850 Pittsylvania County, Virginia, USA English
Editor	Ben W. Brumfield
Subject	Business Accounts
Description	Diary and account books kept by Jeremiah ▾

City Accounts of Leuven

Scope	1438-1439 Leuven, Belgium Dutch
Source	City Archive Leuven
Editor	Hadewijch Masure / Yannick De Meulder
Subject	City Accounts
Description	City Accounts of Leuven from the beginning of August 1438 until end of June 1439. ▾

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 30.3.2023  0  40

[Dashboard](#)

[Collection](#)

George Washington Financial Papers (GWFP)

Scope	1750-1799 USA English
Source	U.S. Library of Congress, Washington D.C., MSS 44693: Reel 115
Editor	Jennifer Stertzer / Erica Cavanaugh

Collection
s
Overview

Collection

Rentrechnung 1718

The following **1 objects** are part of the *Rentrechnung 1718* collection.

Scope	1718 de Liechtenstein
Source	Fürstentum Liechtenstein, Vaduz, Liechtensteinisches Landesarchiv, AS 8/2
Editor	Anton Büchel
Subject	State Accounts

Dashboard

Download ▾

All XML/TEI

All XML/RDF

Rentrechnung 1718–1720, 1723

Scope 1718
German

Source Fürstentum Liechtenstein Vaduz
Liechtensteinisches Landesarchiv
AS 8/2

🔗 <https://gams.uni-graz.at/o:depcha.rentrechnung.1>

📅 30.3.2023

⇄ 637

Edition RDF XML/TEI

[« Collection](#)[Edition](#)[About](#)[Transactions](#)[Economic Goods](#)[Economic Agents](#)[Accounts](#)[Currencies and Units](#)[Places](#)[Export ▾](#) Entity view off

Die ertragreiche stypatiente ammodiationsquellen von Georgi 1718 bis 1719 per 22 octobris die herzogliche ammodiations, das Peter Walser, Peter Lichtenstein, dessen Sohne Thomas und Anthoni Walser, Florian Wolf sel. gewester hochfürstlicher Weingartenmeister nachfolgender gestalt abgestattet. Und zwar mit bahrem Gelt zu Handen der fürstl. Verwaltung vom 1. September 1718 bis Endt Marty 1720 zusammen hiedurch geliefert per 513 fl

mit gelieferten wein

auf gnedigste genembaltung und lauth beygelegter attestation auf die ausgerufene steur das virtl a 42 klapfer haben 21 fuder ertragen per 1176

No. 2

Von dem Haupt Zollner Liechtenstein Thomas Walser

Von 1. und respective 22 Octobris bis 22 Novembris 1718 48 25

Von 22 Novembris bis 22 Decembris 60 15 1/4

Latus 1689

[1v]

An mitgelieferten competenz wein denen hrn. hofcaplänen Panzer und Spekhle pro 1719 per 1 ½ fuder das virtl per 42 kr. wie oben 84

Mit überlassenen Zohl und Umbgelt

Vermög beylag vom 1. Oktober 1718 bis Georgi 1719 vor das erste 230 fl und vor das lestere 183 30 zusammen überlassen 413 30

Mit verschieden bezahlten auszügen rechnungen und anweisungen von Georgi 1719 bis letzten Marty 1720 hindurch anweisung gethan und überlassen pr 4013 30

Latus 4571 Summa des stypatiert und gelieferten admodiations gelts von Georgi 1718 bis 1719 6200 fl - kr

[2r]

Ferner nemme per empfang dasjenige zollgelt, was an statt deren 230 fl, so deren beständern gutt beschrieben von 1. und respective 22 octobris 1718 bis 22 april 1719, als durch welche zeit der gedachte beständer solches noch hätten beziehen sollen, eingebracht werden als

Von dem Haupt Zollner zue Lichtenstein Thomas Walser

Von 1. und respective 22 Octobris bis 22 Novembris 1718 48 25

Von 22 Novembris bis 22 Decembris 60 15 1/4

◀◀ Collection

Edition

About

Transactions

Economic Goods

Economic Agents

Accounts

Currencies and Units

Places

Export ▾

Entity view on

Econ. Agent Individual Group Organisation Commodity Service Right Place Date Transaction Account Subtotal Total

Neuer Empfang Admodiations Gelt

Die ertragnis des stypatirten Admodiationsquarti von Georgi 1718 bis 1719 per 6200 fl haben die herrschaftl. Admodiatores, als Peter Walser, alter Landtammann, dessen Söhne Thomas und Anthoni Walser, Florian Wolf sel. gewester hochfürstlicher Weingartenmeister nachfolgender gestalt abgestattet. Und zwar mit bahrem Gelt zu Handen der Fürstl. Verwaltung vom 1. September 1718 bis Endt Marty 1720 zusammen hiedurch geliefert per 513 flf



mit geliferten wein

auf gnedigste genembhaltung und lauth beygelegter attestation auf die ausgerufene steur das virtl a 42 klapfer haben 21 fuder ertragen per 1176f



No. 2

Von dem Haupt Zollner Liechtenstein Thomas Walser

Von 1. und respective 22 Octobris bis 22 Novembris 1718 48 f 25k

Von 22 Novembris bis 22 Decembris 60 f 15 k 1/4d

Latus 1689f

[1v]



An mitgelieferten competenz wein denen hrn. hofcaplänen Panzer und Spekhle pro 1719 per 1 ½ fuder das virtl per 42 kr.k wie oben 84



Mit überlassenen Zohl und Umgelt

Vermög beylag vom 1. Oktober 1718 bis Georgi 1719 vor das erste 230 flf und vor das lestere 183 f 30 k zusammen überlassen 413 f 30k

Mit verschieden bezahlten auszügen rechnungen und anweisungen von Georgi 1719 bis letzten Marty 1720 hindurch anweisung gethan und überlassen pr 4013

Jahrrechnungen der Stadt Basel 1535 bis 1610

Prof. Susanna Burghartz from the University of Basel prepared an edition of the annual municipal accounts of Basel in the 16th century, which is major source for the social and economic history of the town. In cooperation with the ZIM the project created a semantically enriched edition following the research result of Georg Vogeler on the digital edition of medieval and early modern accounting. The edition allows to access the accounts as texts and as numerical data as well.

Scope	1535-1610 de Basel, Switzerland
Source	Staatsarchiv Basel-Stadt
Editor	Susanna Burghartz Sonia Calvi Lukas Meili Jonas Sagelsdorff Georg Vogeler
Subject	City Accounts

[🔗 https://gams.uni-graz.at/context:depcha.srbas](https://gams.uni-graz.at/context:depcha.srbas)
📅 30.3.2023
⇄ 77789

[Dashboard](#) [Accounts 6242](#) [Currencies and Units](#) [Collection](#)

Transactions 77789

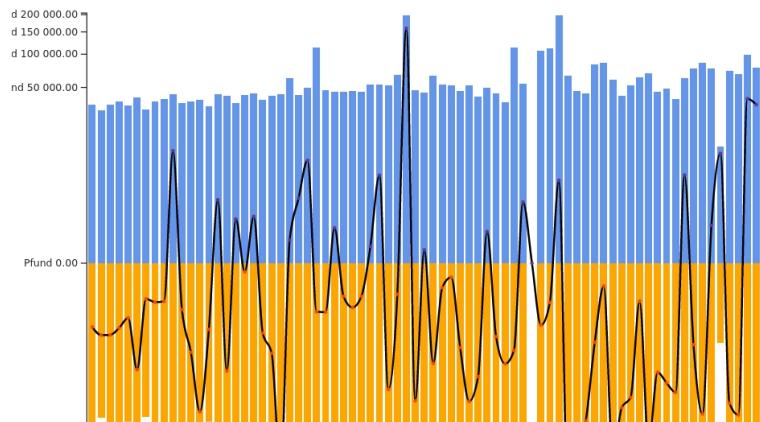
CSV Export

Search:

Transaction	Date	Entry	From	To	Measure	Good
srbas.1535#T1	1535	Prima angaria jm lxxxij lb	#bs_Weinungeld-1	Stadt Basel	1083 Pfund	[Monetary Value]
srbas.1535#T2	1535	Secunda angaria vijic lxxv lb	#bs_Weinungeld-2	Stadt Basel	875 Pfund	[Monetary Value]
srbas.1535#T3	1535	Tercia angaria vijc lxxvii lb	#bs_Weinungeld-3	Stadt Basel	778 Pfund	[Monetary Value]
srbas.1535#T4	1535	Quarta angaria ixc xxiiij lb	#bs_Weinungeld-4	Stadt Basel	924 Pfund	[Monetary Value]
srbas.1535#T5	1535	Prima angaria ixc lxj lb	#bs_Mühlenungeld-1	Stadt Basel	971 Pfund	[Monetary Value]
srbas.1535#T6	1535	Secunda angaria jm jc lxi lb	#bs_Mühlenungeld-2	Stadt Basel	1165 Pfund	[Monetary Value]
srbas.1535#T7	1535	Tercia angaria	#bs_Mühlenungeld-3	Stadt Basel	932 Pfund	[Monetary Value]

[Treemap](#) [Bar Chart](#) [Circle Packing](#) [Line Chart](#)

debit
 credit
 balance
 exponential scale



“Digital **assertive editions** can be identified by the user interface and in the data structures, which try to combine the **transcription** with a **database of statements** made in the text.”

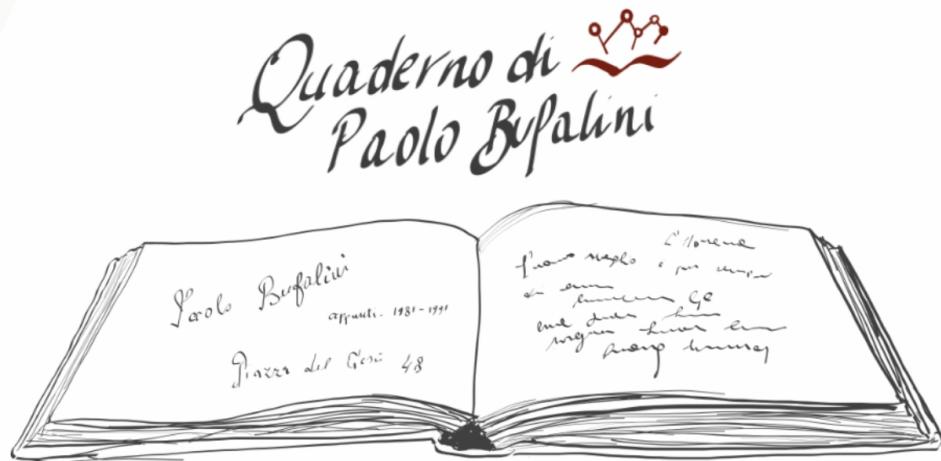
Vogeler 2019

Daquino, M., Dello Buono, M., Giovannetti, F., & Tomasi, F. (2020).
Paolo Bufalini, Appunti (1981-1991) [Semantic Scholarly Digital Edition]. Digital Humanities Advanced Research Centre (/DH.arc).

[Project homepage](#) | [DOI](#)

Paolo Bufalini's Notebook

A semantic digital scholarly edition of Paolo Bufalini's notebook, *Appunti 1981-1991*, aimed to enhance the complex network of intratextual and intertextual relations which characterizes the notebook.

[Learn more](#)

✖ Filters

✖ People

- Albini, Giuseppe
- Alfieri, Vittorio
- Alighieri, Dante
- Antonio, Marco
- Arzeni, Bruno
- Augusto, Ottaviano
- Augusto, Tiberio Giulio
- Cesare
- Aurelio, Marco
- Autore non identificato
- Belli, Giuseppe Gioachino
- Bonfante, Pietro
- Bruno, Giordano
- Bruto, Marco Junio
- Campana, Dino

✖ Works

- Sonetti romaneschi, Giuseppe Gioachino Belli



p. 0

0

Paolo Bufalini

Appunti

1981–1991

Piazza del Gesù 48

Tel 6783841

00186–Roma

1

L'Havana. Sett. 1981.

T. M.

“

L'uomo sveglio è pur sempre

T </>

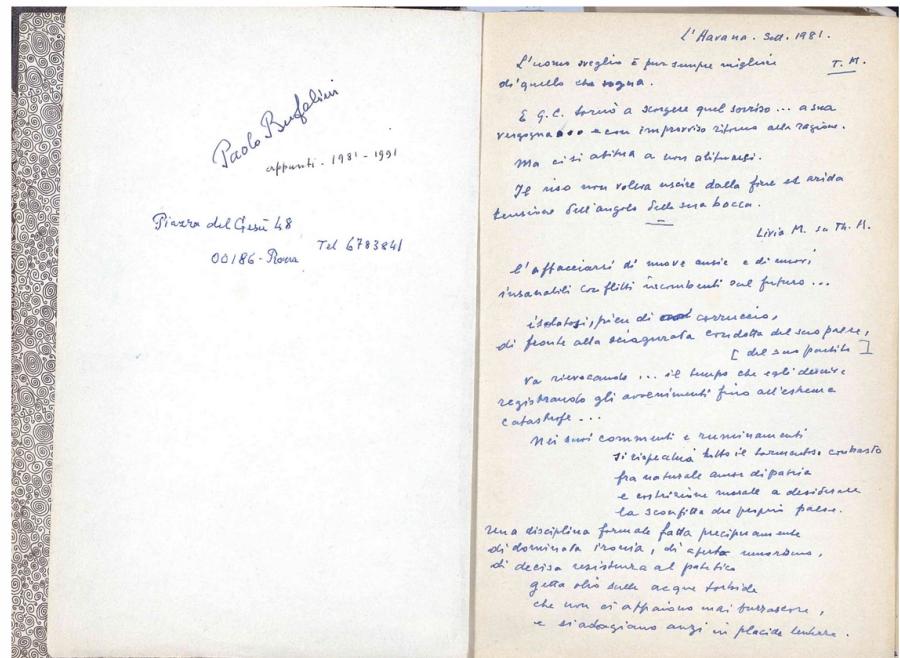
0-1

▼

Metadata ?



✖ Facsimile



X 24 results

- Alessandro Manzoni is mentioned by Paolo Bufalini
- Alessandro Manzoni is mentioned by Paolo Bufalini
- Alessandro Manzoni is mentioned by Paolo Bufalini

X Filters



People

Person role

Manzoni, Alessandro

- Author
- Mentioned person

Works

X Transcription

T </>

p. 0

0

Paolo Bufalini

Appunti

1981–1991

Piazza del Gesù 48

Tel 6783841

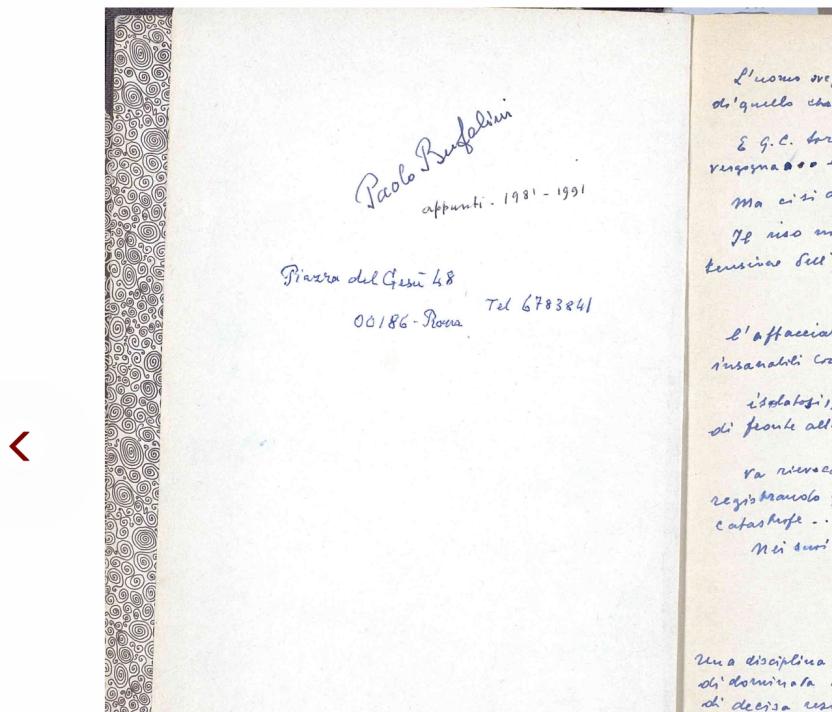
00186–Roma

1

L'Havana. Sett. 1981.

0-1

X Facsimile



✖ 7 results

- Alessandro Manzoni is mentioned as author by Paolo Bufalini
- Alessandro Manzoni is mentioned as author by Paolo Bufalini
- Alessandro Manzoni is mentioned as author by Paolo Bufalini

✖ Filters



People

Person role

Manzoni, Alessandro

- Author
- Mentioned person

Works

- I promessi sposi, Alessandro Manzoni
- La monaca di Monza (da Fermo e Lucia), Alessandro Manzoni
- Inni sacri, Alessandro Manzoni

✖ Transcription

T </>

p. 0

0

Paolo Bufalini

Appunti

1981–1991

Piazza del Gesù 48

Tel 6783841

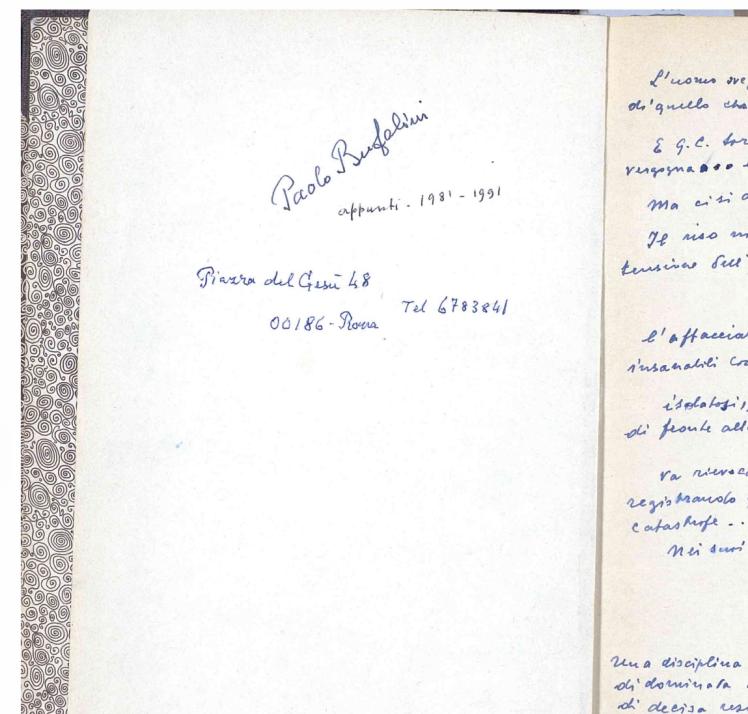
00186–Roma

1

L'Havana. Sett. 1981.

0-1

✖ Facsimile





4-5

Metadata ?

×

Transcription

p.5

“

O degli afflitti scampo,
inlita come il sol, terribil come
 oste schierata in campo.

”

Lucrezio:

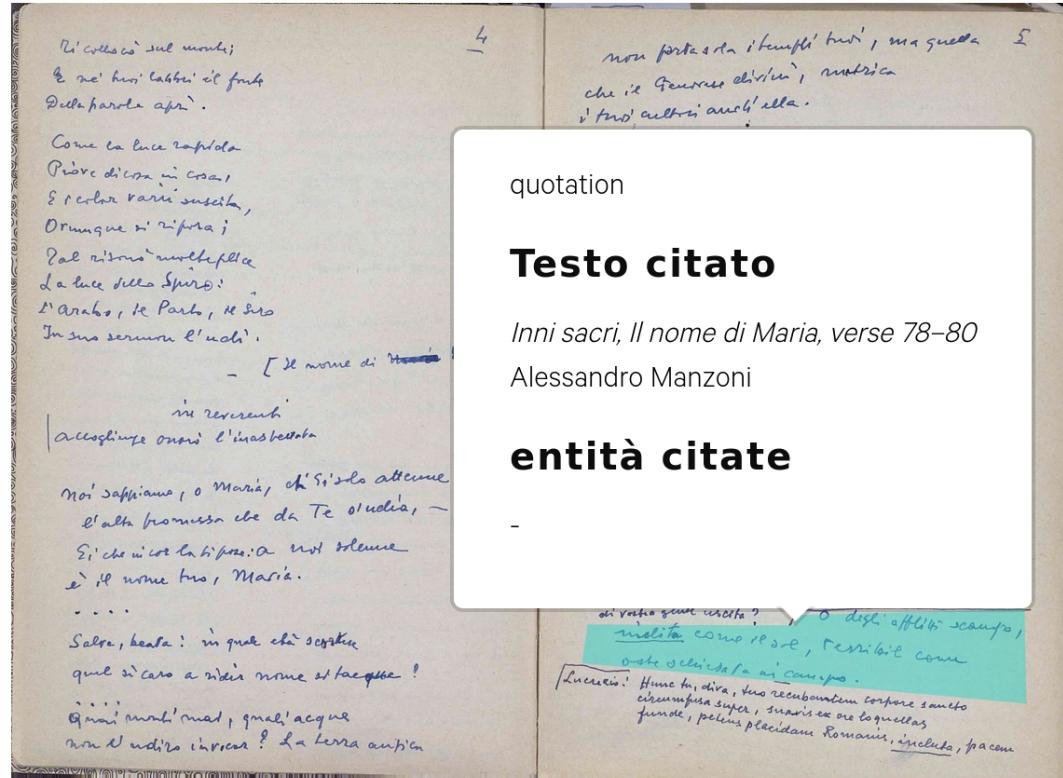
“
 Hunc tu, diva, tuo recubantem
 corpore sancto
 circumfusa super, suavis ex ore
 loquellas
 funde, petens placidam Romanis,
inluta, pacem

”

T </>

×

Facsimile



quotation

Testo citato

Inni sacri, Il nome di Maria, verse 78–80
 Alessandro Manzoni

entità citate

X Transcription

T </>

0.15 Anche colui che grandi imprese di guerra
gloriosamente compì,
e le cui gesta ancor vive e valide sono,
e che più d'ogni altro agli occhi dei popoli s'innalza,
- questo, suo padre una volta strappò via
dall'amica appena coperto di una ⁱⁿcamicia.

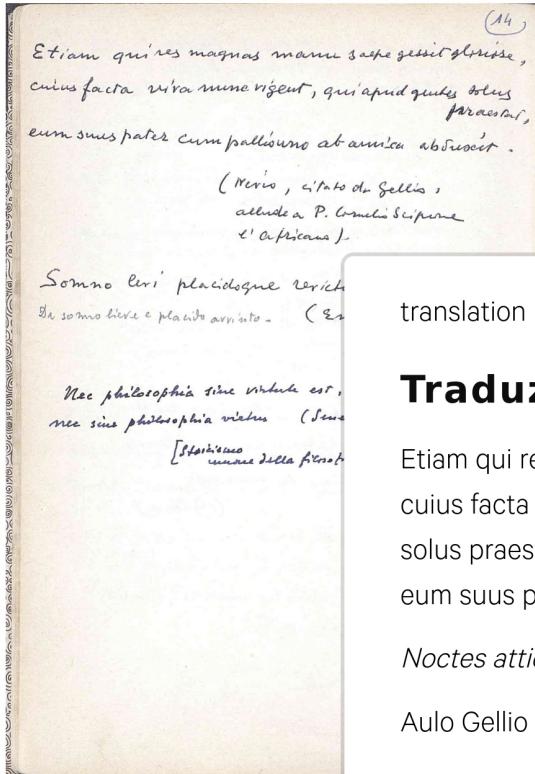
16

17

"

Ave filia carissima

X Facsimile



15
Anche colui che grandi imprese di guerra
gloriosamente compì,
e le cui gesta ancor vive e valide sono,
e che più d'ogni altro agli occhi dei popoli s'innalza,
- questo, suo padre una volta strappò via
dall'amica appena coperto di una ⁱⁿcamicia.

translation

Traduzione dall'originale

Etiam qui res magnas manu saepe gessit gloriose, cuius facta viva nunc vigent, qui apud gentes solus praestat, eum suus pater cum pallio uno ab amica abduxit.

Noctes atticae, volume 7, chapter 8, excerpt 1

Aulo Gellio

Traduttore

Paolo Bufalini



4-5

Metadata ?

✖ Transcription

T </>

p.5

“

O degli afflitti scampo,
inlita come il sol, terribil come
 oste schierata in campo.

”

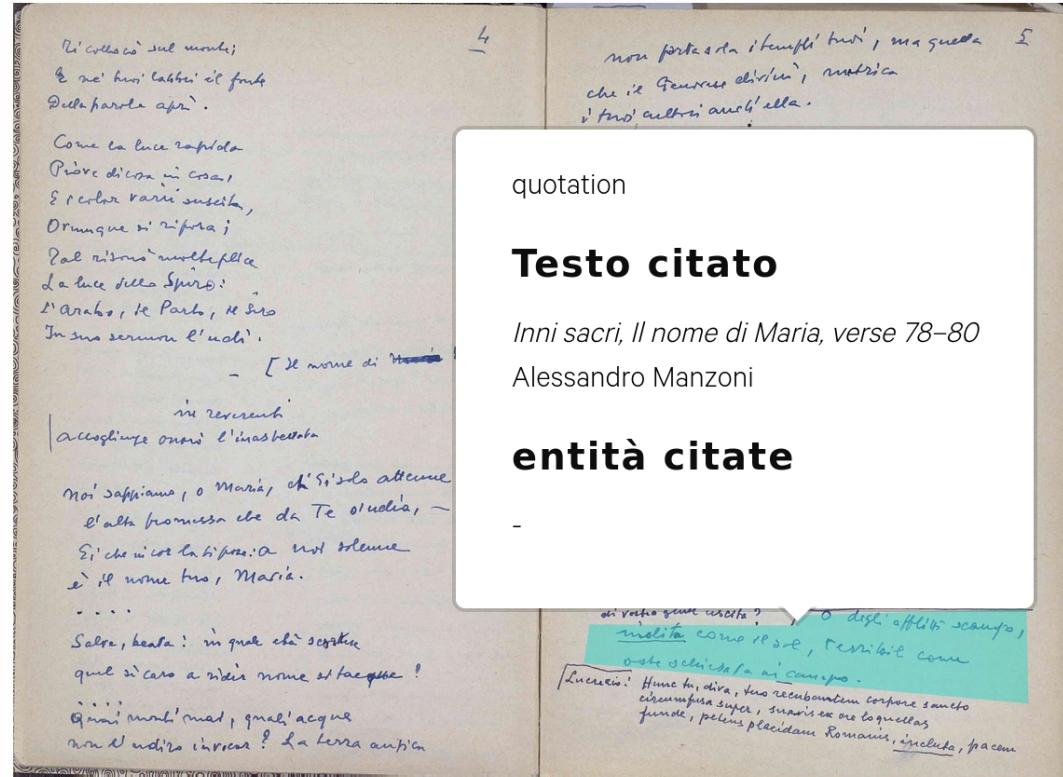
Lucrezio:

“

Hunc tu, diva, tuo recubantem
 corpore sancto
 circumfusa super, suavis ex ore
 loquellas
 funde, petens placidam Romanis,
inlita, pacem

”

✖ Facsimile



quotation

Testo citato

Inni sacri, Il nome di Maria, versi 78-80
 Alessandro Manzoni

entità citate





X Transcription

p. 5

"

"

O degli afflitti scampo,
incli-

oste Hunc tu, diva, tuo

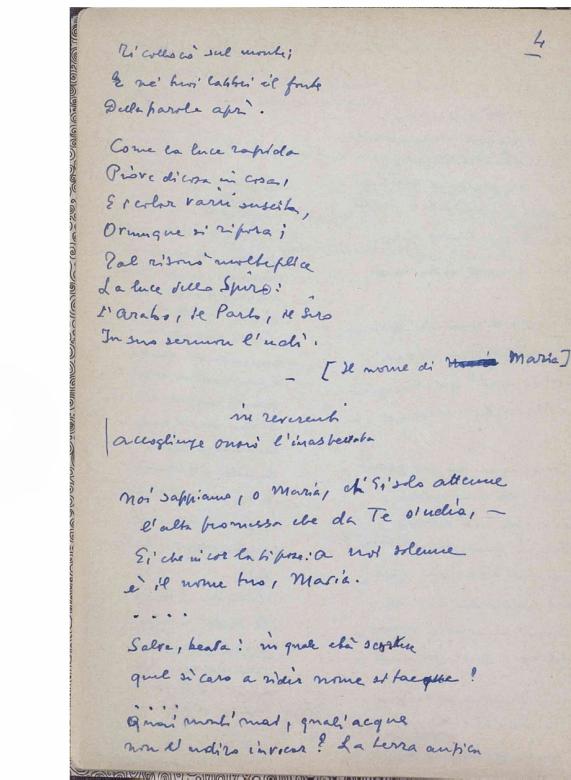
recubantem corpore
sancto circumfusa super,
suavis ex ore loquellas
funde, petens placidam
Romanis, incluta, pacem

Hunc tu, ----, ----
corpore sancto

circumfusa super, suavis ex ore
loquellas
funde, petens placidam Romanis,
incluta, pacem

T </>

X Facsimile



non porta da i tempi' tuoi', ma quella 5
che il Genero ch'è in, mistero
v' f'no' altri' aug'ella.

Ne' grandi orre, e quando cade il die,
e quando il sole a mezzo croce il passa,
Saluta i'c Barony che le turba' vole
l'urto al s'urto.
Mille paure s'ele voglio brama
te rompa il fanciulletto; a Te bennant
quando l'ignora raggiunt la fortuna,
l'core il rassigant.

Bu' purg' beata, mu' di' pernici' te b'anche
fanti piacque al Signore di dire incima
questi fanciulle' b'occa.
O parlo d' Isacco, o nell' ombra' oscurata
caduto l' oda ai tang' ieg' coru'nta,
nuou' e' Cor'ch'as in una' fanta' arcu'nta
di' voto' qu'nd' u'nta' / O degli afflitti scampo,
inclita come i' so', terribil come
oste i'cl'ci'data a i'c'anc'po.
Lucerini' Hunc tu, diva, tuo recubantem corpore sancto
circumfusa super, suavis ex ore loquellas
funde, petens placidam Romanis, incluta, pacem

4-5



Metadata



For full technical description of the digital edition see Daquino, M., Giovannetti, F., & Tomasi, F. (2019). Linked Data per le edizioni scientifiche digitali. Il workflow di pubblicazione dell'edizione semantica del quaderno di appunti di Paolo Bufalini. *Umanistica Digitale*, 3(7), <http://doi.org/10.6092/issn.2532-8816/9091>.

Paolo Bufalini's Notebook

[SPARQL endpoint](#)

[Download the dataset](#)

[Technical specifications](#)

[Web application](#)

[Credits](#)

[Licences](#)

/DH.arc - Digital Humanities Advanced Research Centre

[About](#)

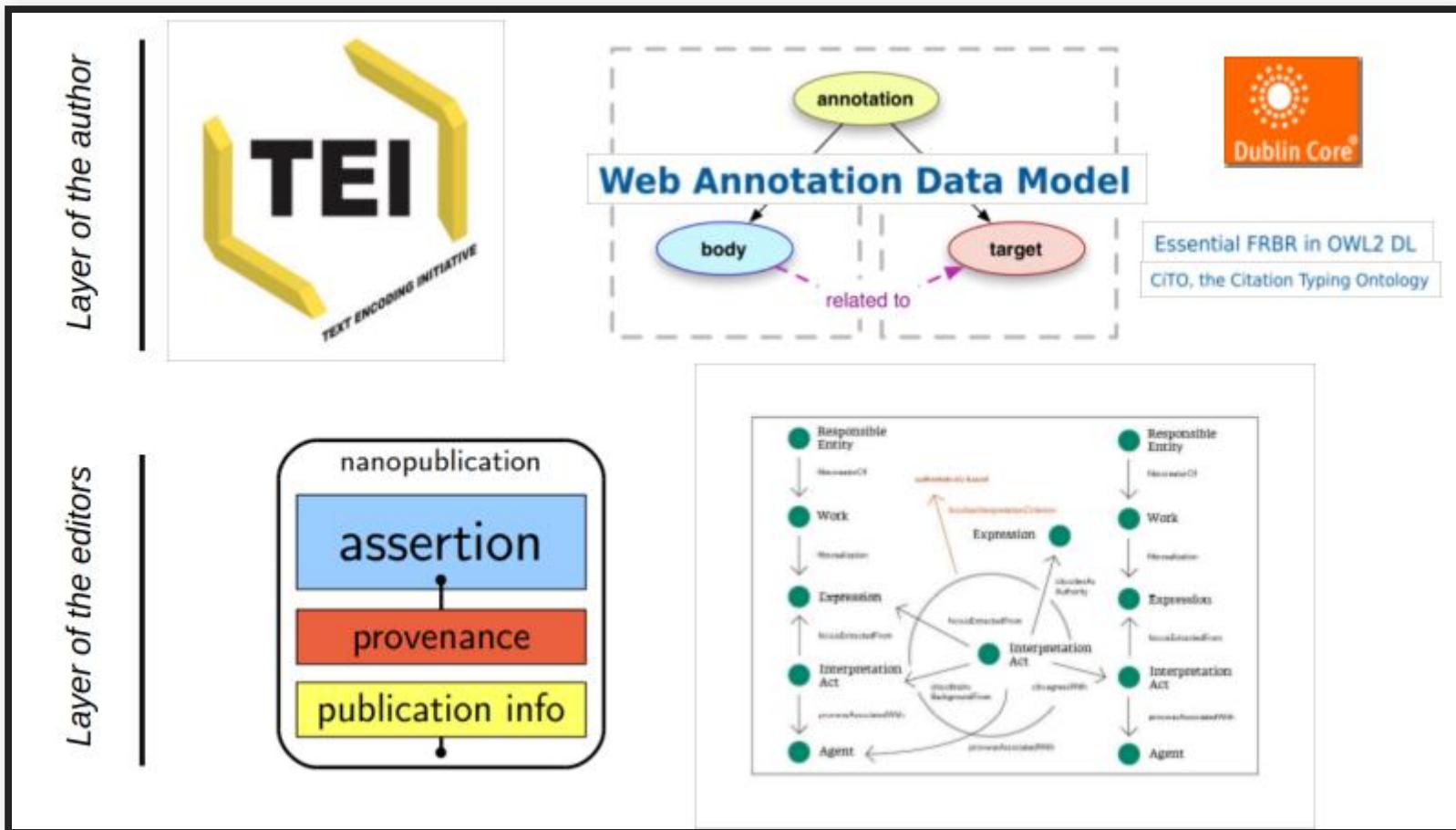
[All /DH.arc projects](#)

[Contacts](#)



“The digital scholarly edition of Paolo Bufalini's notebook features **two interpretative layers**: **the author**, who juxtaposed texts and highlighted mutual influences, and **the editors**, who have analysed and formalized Bufalini's choices.”

<http://projects.dharc.unibo.it/bufalini-notebook/introduction>



LEFT OUT

Linguistics, musicology, heraldry, prosopography, and more ...

“Yet, what is still missing are fully resolvable URIs for texts and their citable units. Such URIs are of the highest importance for this emerging graph of data, considering that cited primary sources are an area where existing datasets often overlap”

Cayless and Romanello 2021

→ Distributed Text Services ([DTS](#))

TOWARDS A PHILOLOGICAL WEB OF DATA

Critical and genetic editions

Example: ordering witnesses (*classement des manuscrits, recensio*)

Use of computational tools in the Humanities involves making
explicit what is often implicit

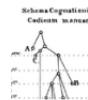
→ create a data model and populate it, operationalise

The **ordering of witnesses** is often an implicit process, also in digital textual scholarship (the collation process is a step before or after the ordering itself).

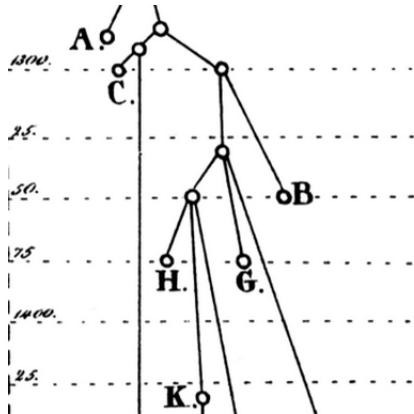
Example: ordering witnesses (*classement des manuscrits, recensio*)

- GENO, a OWL2 ontology for genetic criticism and editing
- Reuse of OpenStemmata data

RDF STEMMA: REUSE OF OPENSTEMMATA



Open Stemmata



Who are we?

Open Stemmata is a organisation aiming at creating an Open Source database of textual genealogies (i.e. stemmata). It was created on the 20th Nov. 2020 by Jean-Baptiste Camps and Gustavo Riva.

[TO THE DATABASE REPOSITORY](#)

<https://openstemmata.github.io/>

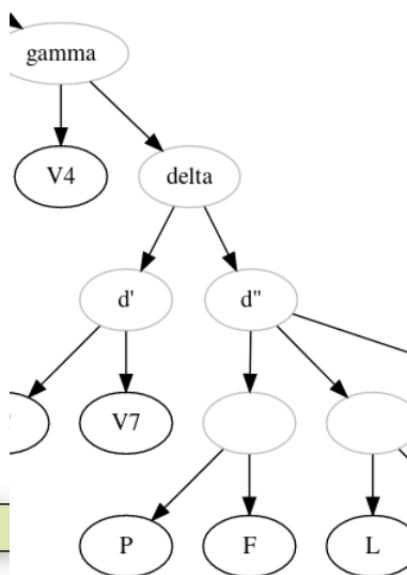
If you are new to digital philology, have a look at our [detailed guidelines](#).

Contributions can be sent as pull request on our [github repository](#). They are composed of

- A **metadata file**, that can be created using [our form](#) (**mandatory**)
- An **image** file, i.e. a scan of the source stemma (optional)
- A **DOT (Graphviz) transcription** of the stemma, that can be easily done with the help of an online editor such as [Edotor](#) (optional)

If you're a bit lost or don't knwo how to make a PR, send us your file by writing an [issue ticket](#).

[LEARN MORE ON HOW TO CONTRIBUTE !](#)



RDF-OPENSTEMMATA

<https://github.com/elespdn/RDF-OpenStemmata>

1. **transform** DOT Graphviz transcriptions of the stemmata from OpenStemmata **into RDF**, according to a test ontology, to **enrich their semantic structure**
2. query the RDF data with **SPARQL** to gain new insights into the dataset

Test stemmatic ontology based on the OpenStemmata data model

Metadata

IRI

<http://example.com/stemma-onto>

Title

Test stemmatic ontology based on the OpenStemmata data model

Creator

Elena Spadini

Description

Test ontology to transform the Open Stemmata DOT data in RDF.

Classes

Existing Witness^C

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[is contaminating](#)

[exemplar of](#)

[is descendant of](#)

[is exemplar of](#)

[is hypothetical](#)

[contaminating exemplar](#)

[of](#)

[is hypothetical exemplar](#)

[of](#)

[is witness in](#)

[Datatype Properties](#)

[has open stemmata entry](#)

[language](#)

[label](#)

[Functional Properties](#)

[has open stemmata entry](#)

[language](#)

[label](#)

Snippet of the RDF data

```
1 @prefix stemma-onto: <http://example.com/stemma-onto#> .
2 @prefix frbr: <http://purl.org/vocab/frbr/core#> .
3 @prefix dct: <http://purl.org/dc/terms/> .
4 @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
5 @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
6
7
8 <Nicolodi_2003_Romani-Turco_stemma> a stemma-onto:Stemma ;
9     <stemma-onto:hasOpenStemmataEntry> "https://github.com/OpenStemmata/database/tree/main/data/ita/Nicolodi_2003_Romani-Turco" ;
10    <dct:language> "ita" .
11
12
13
14
15
16
17
18 <Nicolodi_2003_Romani-Turco_node_Mi14> a stemma-onto:ExistingWitness , frbr:Expression ;
19     rdfs:label "Mi14" ;
20     stemma-onto:isWitnessIn <Nicolodi_2003_Romani-Turco_stemma> .
21
22
23 <Nicolodi_2003_Romani-Turco_node_Mi19> a stemma-onto:ExistingWitness , frbr:Expression ;
24     rdfs:label "Mi19" ;
25     stemma-onto:isWitnessIn <Nicolodi_2003_Romani-Turco_stemma> .
26
27
28 <Nicolodi_2003_Romani-Turco_node_Mi14> stemma-onto:isExemplarOf <Nicolodi_2003_Romani-Turco_node_Mi19> .
```

Example 1. All stemmas with contamination

The query selects all stemmas whose witnesses are linked through properties `:isContaminatingExemplarOf` or `:isHypotheticalContaminatingExemplarOf`, the two properties expressing contamination in this model.

At the moment (April 2023) there are 161 stemmas in total and 33 of them includes contamination, that is around 20%.

```
import rdflib
g = rdflib.Graph()
g.parse("openStemmataData.ttl")

my_query = """
PREFIX stemma-onto: <http://example.com/stemma-onto#>
PREFIX dct: <http://purl.org/dc/terms/>

select distinct
?stemma
where {
    {?witness stemma-onto:isContaminatingExemplarOf ?descendant }
    UNION
    {?witness stemma-onto:isHypotheticalContaminatingExemplarOf ?descendant}

    ?witness stemma-onto:isWitnessIn ?stemma .
}
"""

qres = g.query(my_query)
print(str(len(qres))+" RESULTS\n")
for row in qres:
    stemmaName = row.stemma.split('/')[-1]
    print(stemmaName)
```

33 RESULTS

Nicolodi_2003_Romani-Turco_stemma
Trovato_2004_Sannazaro-Arcadia_stemma
Einar_1954_Brennu-njalssaga_stemma
CataldiPalau_1982_LesAmours_stemma
Erbse_1961_Aratos-Phainomena_stemma
Erbse_1961_Thukydides-Historiai_stemma
Arnott_1996_Athenaeus_stemma
Zink_1984_Cleriadus_stemma
Stron̄ski_1906_FliasDeBariolsVTT_stemma

<https://github.com/elespdn/RDF-OpenStemmata>

Example 2. Number of descendants per witness (and OWLRL reasoner)

This query selects the number of descendants per witness, using the superproperty `:isAncestorOf` and the superclass `:Witness`.

The results are 1299 witnesses and the corresponding number of descendants for each of them. The results are saved to a CSV file for better readability. On the 1299 total witnesses:

- 20 have more than 4 descendants (5 to 11)
- 40 have 4 descendants
- 123 have 3 descendants
- 791 have 2 descendants
- 325 have 1 descendant

Reasoner

To run this query, a reasoner is needed to infer the sub/super classes and properties relations. The same query could be written without making use of them, but it would be much more verbose. The reasoner used here is [OWL-RL](#), an extension of the `RDFLib` library. It is rather slow, but it works here for our testing purposes. Note that both the data and the ontology are needed (`g.parse(onto) + g.parse(data)`).

```
import rdflib
import owlrl

g = rdflib.Graph()
g.parse("stemma-onto.ttl") + g.parse("openStemmataData.ttl")

owlrl.DeductiveClosure(owlrl.OWLRL_Semantics).expand(g)

my_query = """
PREFIX stemma-onto: <http://example.com/stemma-onto#>
select
?witness (COUNT( ?witness) AS ?numberOfDescendants)
where {
    ?witness stemma-onto:isAncestorOf ?descendant
} GROUP BY ?witness
"""
```

<https://github.com/elespdn/RDF-OpenStemmata>

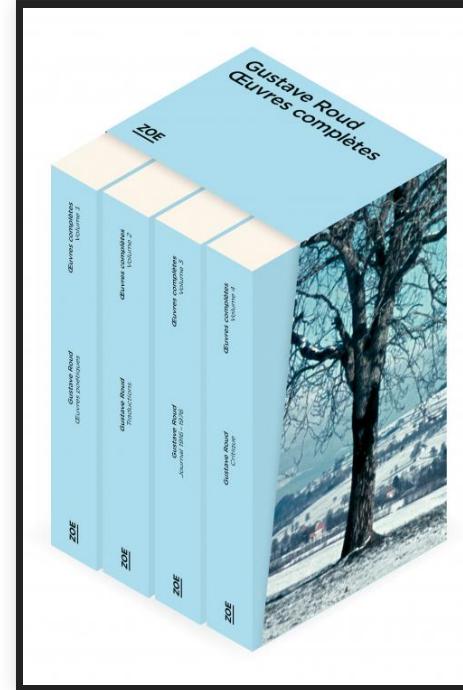
GENETIC NETWORKS AND GENO

Gustave Roud, « Œuvres complètes »

Projet FNS, 2017-2021

Direction : Claire Jaquier et
Daniel Maggetti

**Collaborateurs et
collaboratrices** : Alessio
Christen, Bruno Pellegrino,
Elena Spadini, Julien Burri,
Raphaëlle Lacord



Gustave Roud. Textes & Archives

Archives Recueils Parcours Biographie Recherche

À propos Technical documentation

THREE WAYS TO COMPOSE HIS TEXTS

THREE WAYS TO COMPOSE HIS TEXTS

A. Classical genesis: text and avant-textes

THREE WAYS TO COMPOSE HIS TEXTS

- A.** Classical genesis: text and avant-textes
- B.** From the diary: diary entries, genetic materials a posteriori

THREE WAYS TO COMPOSE HIS TEXTS

- A.** Classical genesis: text and avant-textes
- B.** From the diary: diary entries, genetic materials a posteriori
- C.** Genesis from previously published texts: reuse and continuation, post-editorial or epi- genesis

note de journal

plan

brouillon

manuscrit définitif

article

journal (2)

liste

mise au net

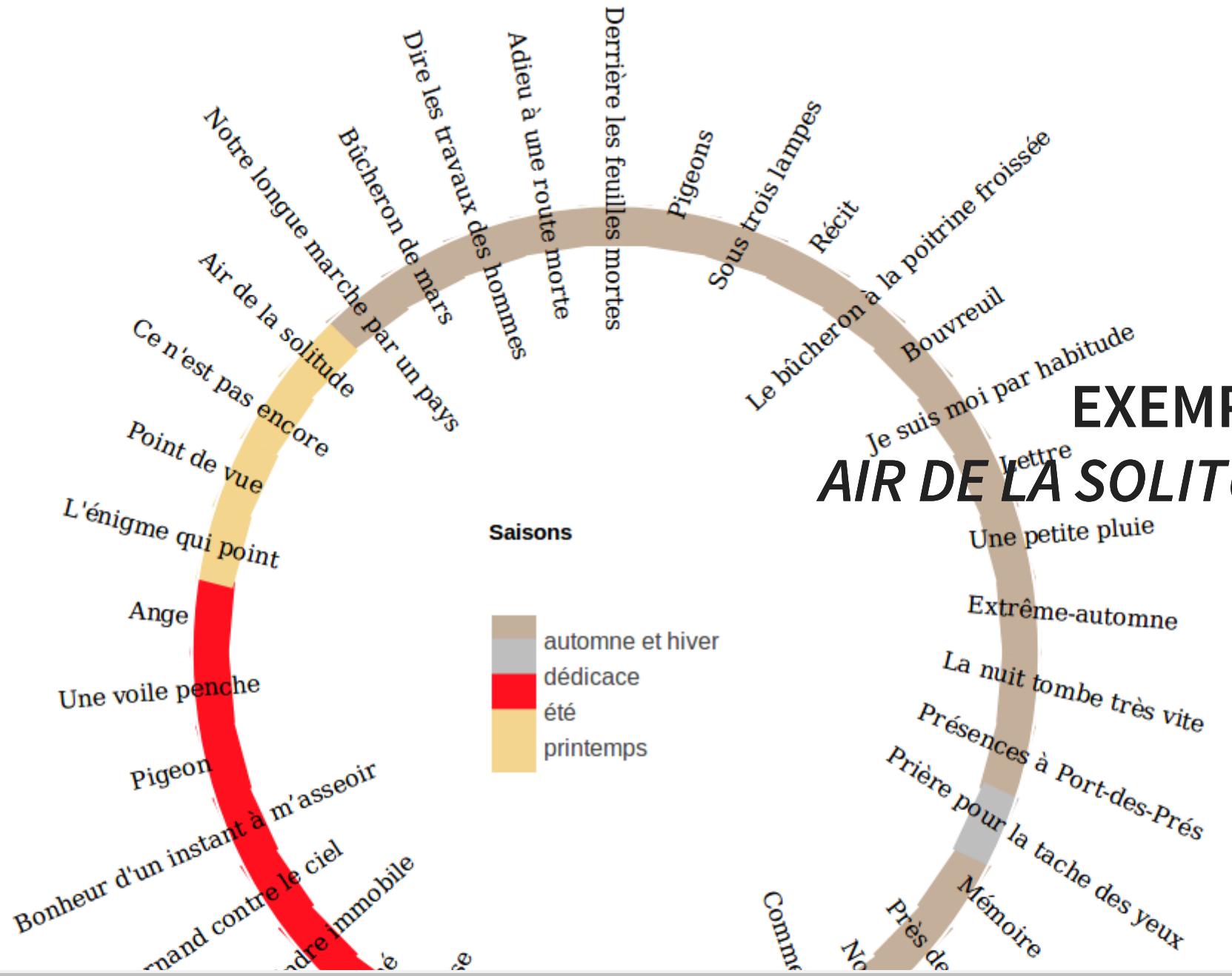
épreuves corrigées

recueil

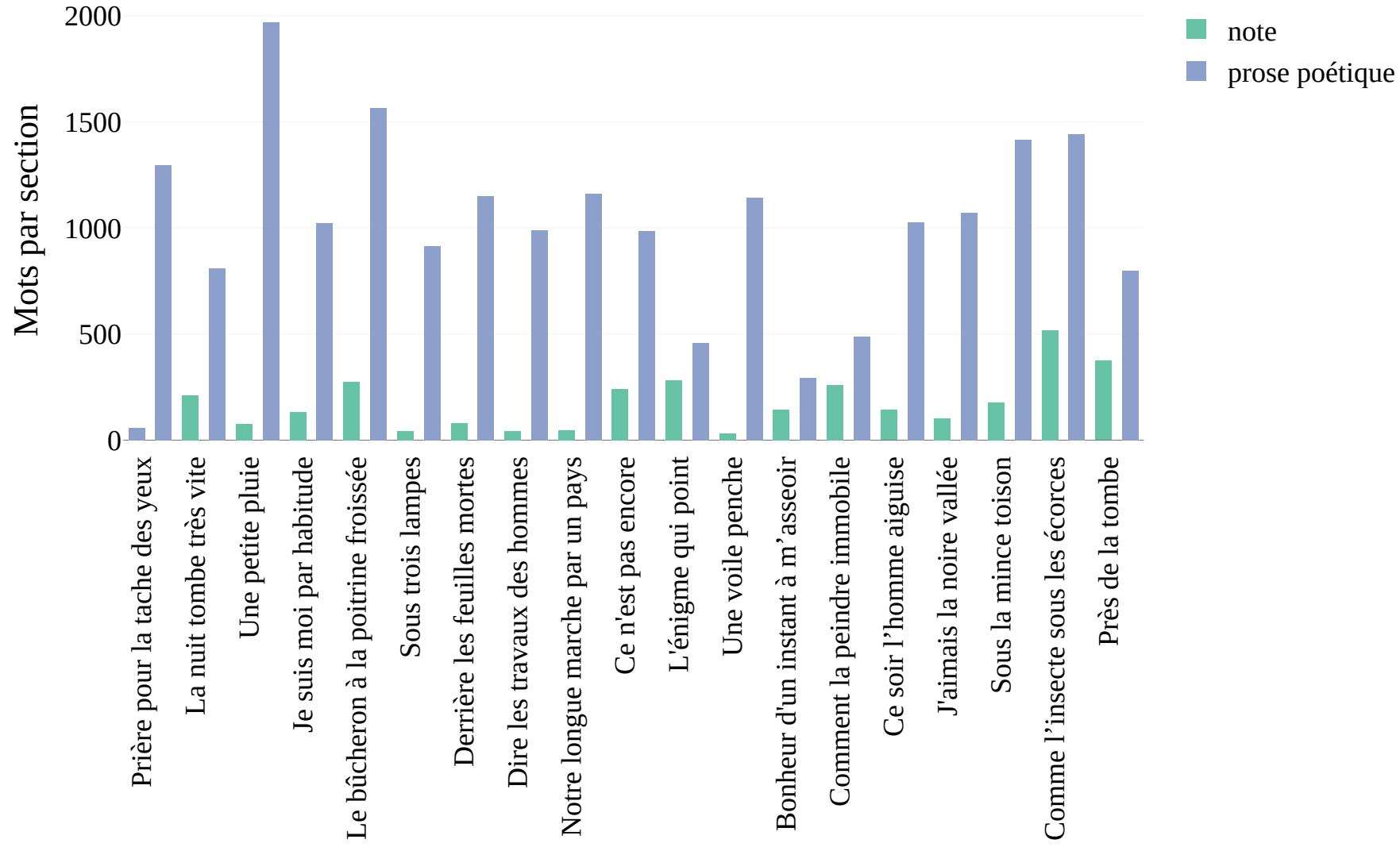
publication

EXEMPLE.

AIR DE LA SOLITUDE



Gustave Roud, *Air de la solitude*, Mermod, Lausanne 1945



depa (pas la gare) et les alpages sous
 allongé dans le bois et pas y preffe
 bien caire dans les bois. A ce
 stérimie alors dans cette forêt
 ou à l'Eti et l'heure de préfere le
 long des bords. L'an d'ici je ne
 d'abord hiver.
 alors dans le bois, lui au contraire
 alors que l'hiver sera tout - et
 alors que alors le bois sera pas
 long à l'heure de préfere le pré
 alors long des bords. L'an d'ici je ne
 d'abord hiver.
 alors alors alors alors alors alors

W.E.
 grena jules dans une prairie

deau frappé alors frappe alors voilà c'est donc

- Blanc : 10 p'ties de couche !
- (1) 10 p'ties
- (2) 10 p'ties
- (3) 10 p'ties
- On préfère non. =

et malaisé la châtaigne =

toutefois par la lenteur que réaction = ça va pas
 je je balle sans pas
 un peu dans le sol, un peu de sol trempé de la colonne
 à la châtaigne... préférable cette situation, avec plus de temps
 et de temps

Et toujours après

les éruptions à l'autre bout du monde.

NB : J'aime bien les

autres bois

sous plus de deux heures que je trouve quand
 temps de temps reste pas le soleil et le temps
 sort alors sous le soleil et pas une heure y passe
 le temps !

Je vais de nouveau sur la trace où ces deux
 de frappé et d'abondance. Non deux
 de j'en suis très fatigué le soleil et de deux
 j'en suis très fatigué mais j'en suis très fatigué

De nouvel abondant et maintenant le puits débarque
 le temps n'a plus de temps pas pas une heure à
 laisser le soleil le puits débarque
 sous sous le soleil

NB (bis)

toujours toujours aussi fatigué que j'en suis
 de frappé et de frappé et le temps de temps de
 ces sols sont pas assez pas le temps pour le temps le temps
 de frappé fatigué que j'en suis pas assez
 pas assez mais pas assez de temps de temps de temps

fatigué que j'en suis pas assez mais pas assez
 pas assez pas assez pas assez

Rien contre l'eau dans le temps. Non mais je ne suis
 pas avec l'eau pour une heure et il y a
 alors alors alors alors alors alors alors alors alors



Lausanne, 10 juillet 1930

1^{re} année - n° 32

Tous les

AUJOURD'HUI

MÉDOMAIRE. — RÉDACTION ET ADMINISTRATION: 3, RUE PÉPINET, LAUSANNE
 ABONNEMENTS: 1 AN: 10 FR.; 6 MOIS: 7 FR. — CHÈQUES POSTAUX: 113 859.
 ANNONCES: PUBLICITÉS: 3, RUE PICHARD.

SOMMAIRE

Adrien DELARZE: Genève.

S. STELLING-MICHAILOV: Le système médiatique des catholiques.

Allard WILD: Espagne.

Loïc PRADAL: La Fleur.

E. G.: Chez les voyageurs d'horizons.

F. G.: Lettre de Paris.

F. D.: Lettre de la campagne.

— Tonnes ».

CENDRE

Notes je ne suis pas tout à fait un être vital

- 31. C.:

... Tel quel as-tu peint de ton livre (tome) et qui fut
 tu parti au temps des roses, dans la possibilité de la
 plume, tout ce qui est dans les vases les fleurs
 leçons des moments, tel que je n'aurai qu'à faire, si
 tu meurs. Mais alors je ne sais pas faire, si
 tu es mort je n'aurai qu'à faire, si

Soi t mon oeil l'image de la vie que j'ai quittée à
 jamais, et pendant cette longue mort, ... avance l'autre,
 le temps de temps de temps de l'autre, l'autre
 pas à pas, je n'en veux pas, mais pour faire, mais pour faire,
 sans rien dans les lettres dont j'en ai pris les fleurs, dire
 moi bien que j'ai un corps, une tête, une vie à vivre,
 que je suis l'autre de vous, tout simplement, et qu'il faut
 que je meure, que je meure, mais surtout, qu'il faut
 que je meure, que je meure, dans le ciel

Mais bien !

Voilà plus de trois heures que je marche seul à la
 maison, sans aucun moyen de me servir, mais sans
 rien faire, je suis assis devant la fenêtre, regardant
 la nature, je suis assis devant la fenêtre, je suis assis
 devant la fenêtre, je suis assis devant la fenêtre, je suis assis
 devant la fenêtre, je suis assis devant la fenêtre, je suis assis
 devant la fenêtre, je suis assis devant la fenêtre, je suis assis
 devant la fenêtre, je suis assis devant la fenêtre, je suis assis

Bien que ça continue, rien que les yeux suivent paisi-
 mement jusqu'à l'ordre ou la crise, mais en toutes les
 traces de temps déjà depuis que les villes et les vil-
 lages fondent dans le soleil, et que mes yeux frappent une
 autre veste. Mais que mes yeux frappent une autre
 fois. Fait à l'heure du matin, il a fait une pause de
 pause de l'heure matinale. Mais que mes yeux frap-
 pent une autre veste. Chose pas grave encore, je sens un
 peu étrange que je suis assis devant la fenêtre, je suis assis
 devant la fenêtre, je suis assis devant la fenêtre, je suis assis

Avant, au milieu de la nuit des Alpes hautes, mal-
 ains bonnes, rendent des sangs ; j'entends pas
 la première fois le rossignol. Pour ce temps, toutes mes
 solitudes paient l'heure. Des îles de pain, les collines
 solides dans la lune, je regarde le vert partout éprou-
 vant les yeux se perpétuel entame à l'angle, avant de par-
 tir l'autre. Ton épouse d'en trait le noir liquide qui
 ramasse au bout.

Entends les voix des pâquerettes sur la rive, et leurs

pas dans les rives humides couvertes. Un homme tombe,
 debout près de l'église sans sonner l'heure. A ma droite

les vagues distantes ou l'assomme l'image des

de pêcheurs

Je prends ici le dernier cordeau d'un de cette anné-

e. Une voix pris de moi encourage son battage. Un cordeau
 des cloches de bousculade, le son bâtie. Je sens tous

mes cordes encore vivas. Un vent très

fort souffle

mais je suis assis devant la fenêtre

le matin

la fenêtre

la fenêtre

la fenêtre

la fenêtre

Je suis à jamais envie
 de son bouteille ?

Ami chéri, je suis
 à ce point que je suis
 de tout gâté, parce que
 je suis à ce point que je suis

Les puritains sont le
 représentant les plus
 bêtes égoïstes bêtards
 et révoltes

Le vent se lit dans les feuilles et les feuilles
 mortes, ce n'est pas tout les objets sans ordre qu'ils
 font un changement assez sans cause modifiée. Alors
 l'obscurité pour à peu près un peu plus à la fin des
 nuits que dans les jours, alors que le temps n'est
 pas différent. Mes amis égocentrés et mes meugles
 et autres sortes d'autre voient il n'est autre chose que le vent

O frère, tu fais vivre la joie en un cœur de ce
 dimanche matin (vendredi) et dimanche matin

mais je suis pas tout à fait un être vital

Le vent qui porte
 les puritains, le vent
 qui porte à peu près
 tout vivant de son
 temps et de son temps
 de son temps et de son temps

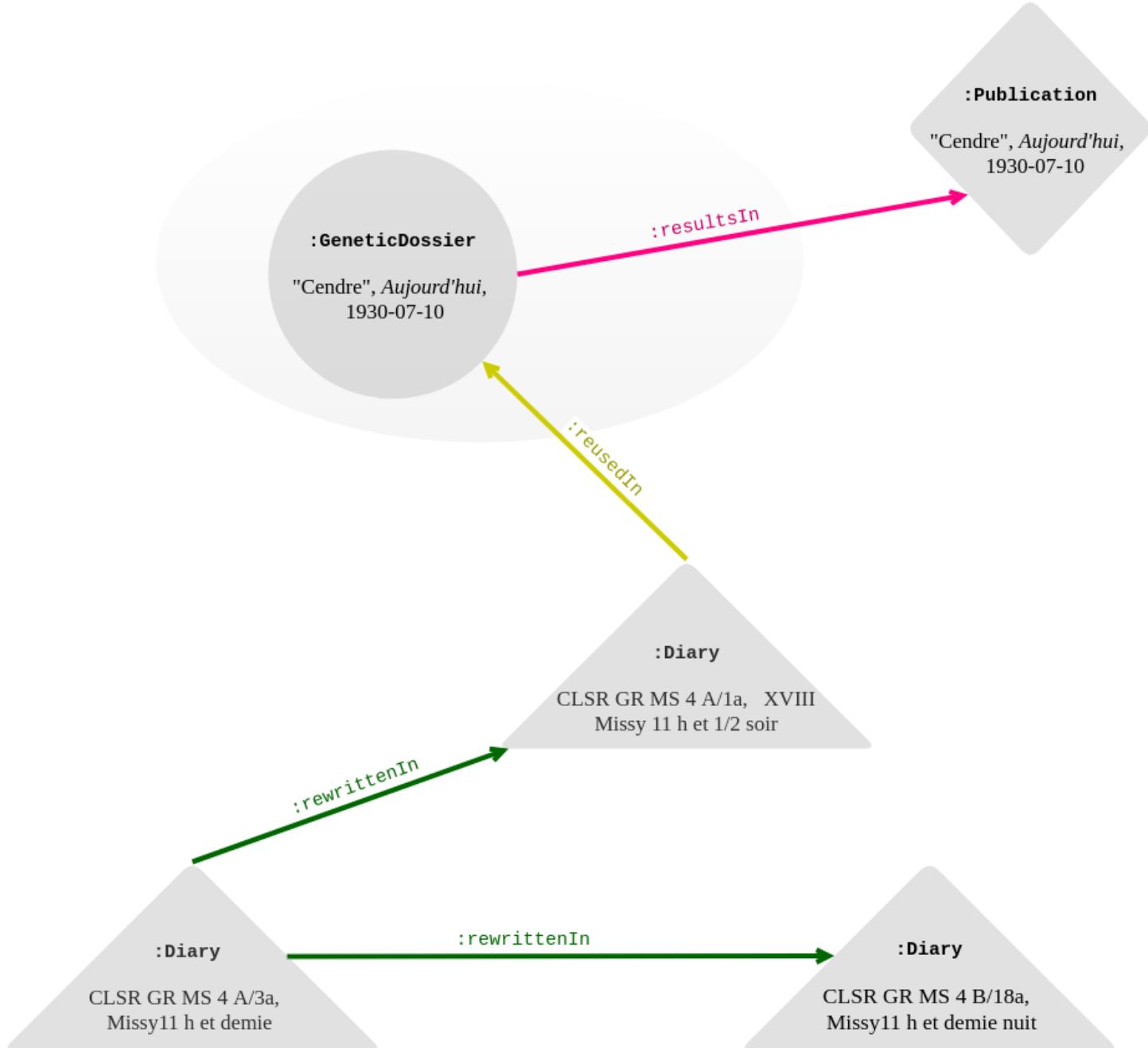
Côte apostolique, une
 grande église, une

Son temps que
 ça continue à venir
 et venir et venir
 et venir et venir

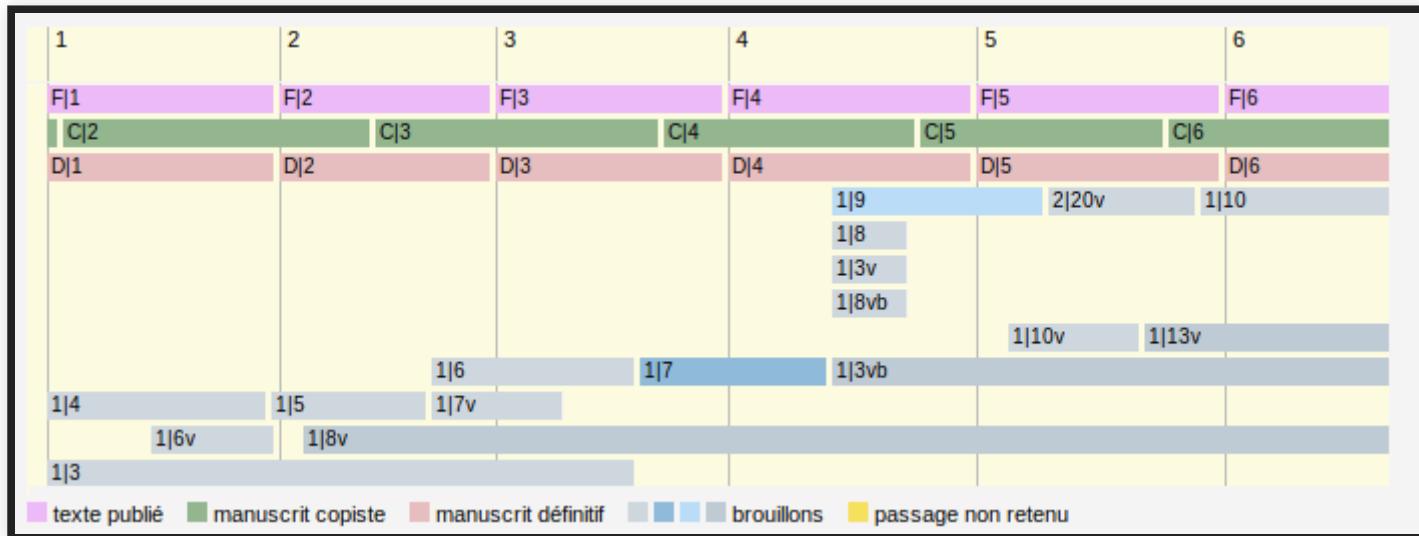
Pour les personnes qui
 ça continue à venir
 et venir et venir et venir

Je pose mes questions
 à l'autre, et l'autre pose
 ses questions à l'autre

Chaque personne
 que je pose mes questions
 à l'autre et l'autre pose
 ses questions à l'autre



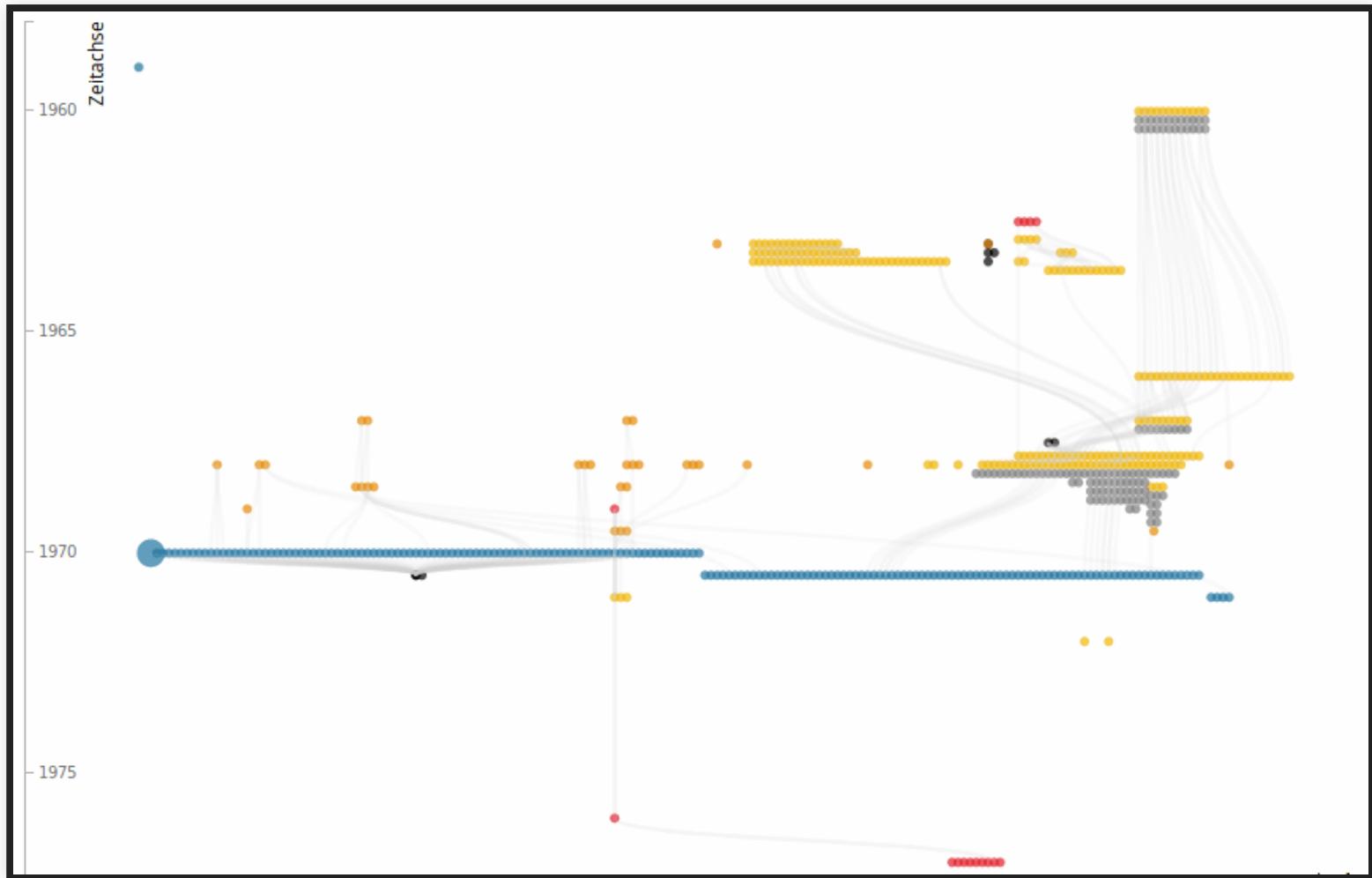
FROM THE DOCUMENT TO THE NETWORK



Les manuscrits de Madame Bovary. Tableau génétique des brouillons



Friedrich Dürrenmatt, *Das Stoffe-Project*. Einzelblatt-Stemma *Der Tod des Sokrates*



Hermann Burger: [Lokalbericht](#). Digitale Edition. Herausgegeben von Peter Dängeli, Magnus Wieland, Irmgard M. Wirtz und Simon Zumsteg. Version. Bern 2016



Robinson de Paul Valéry : édition génétique

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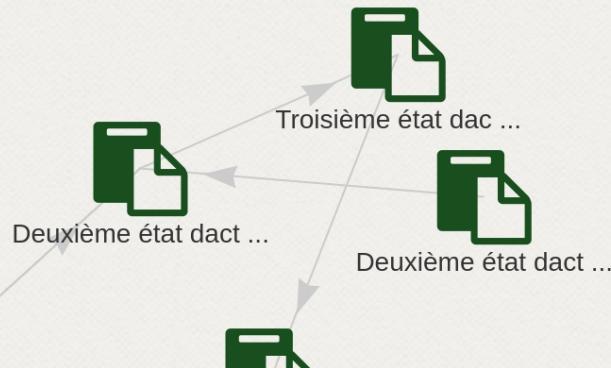
Index des valeurs

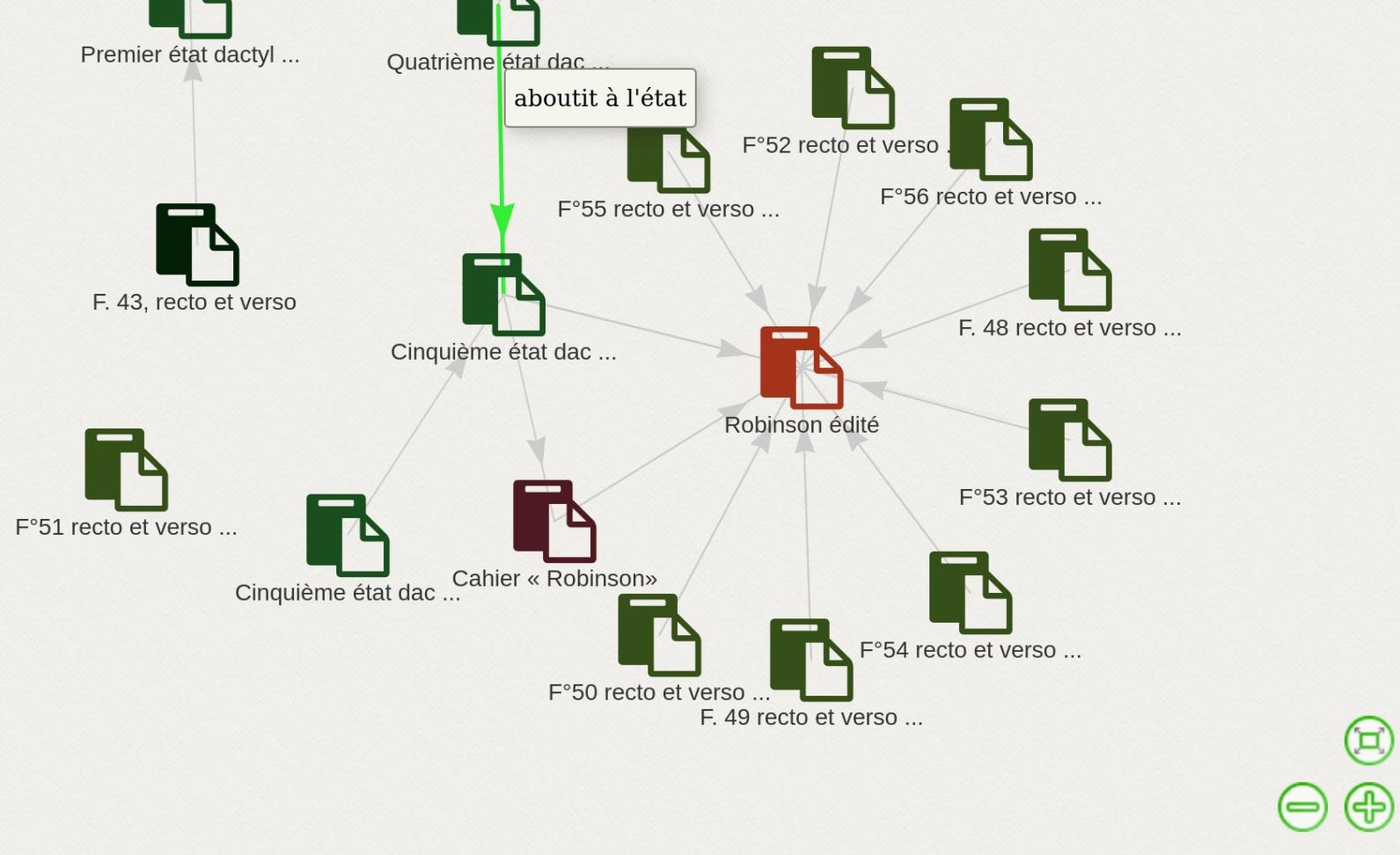
Genèse de Robinson

Présentation du ...

Les relations entre toutes les notices du corpus

En plaçant le curseur sur une flèche, le nom de la relation apparaît



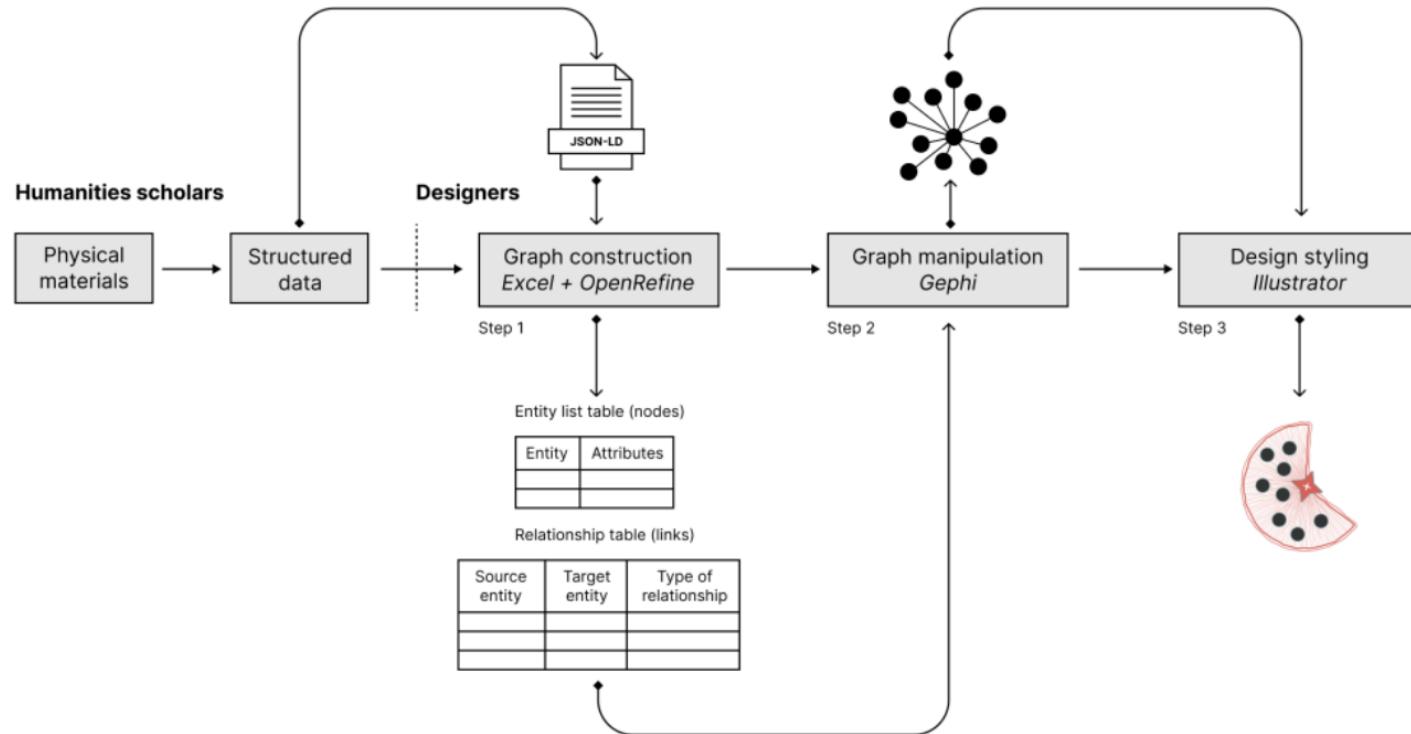


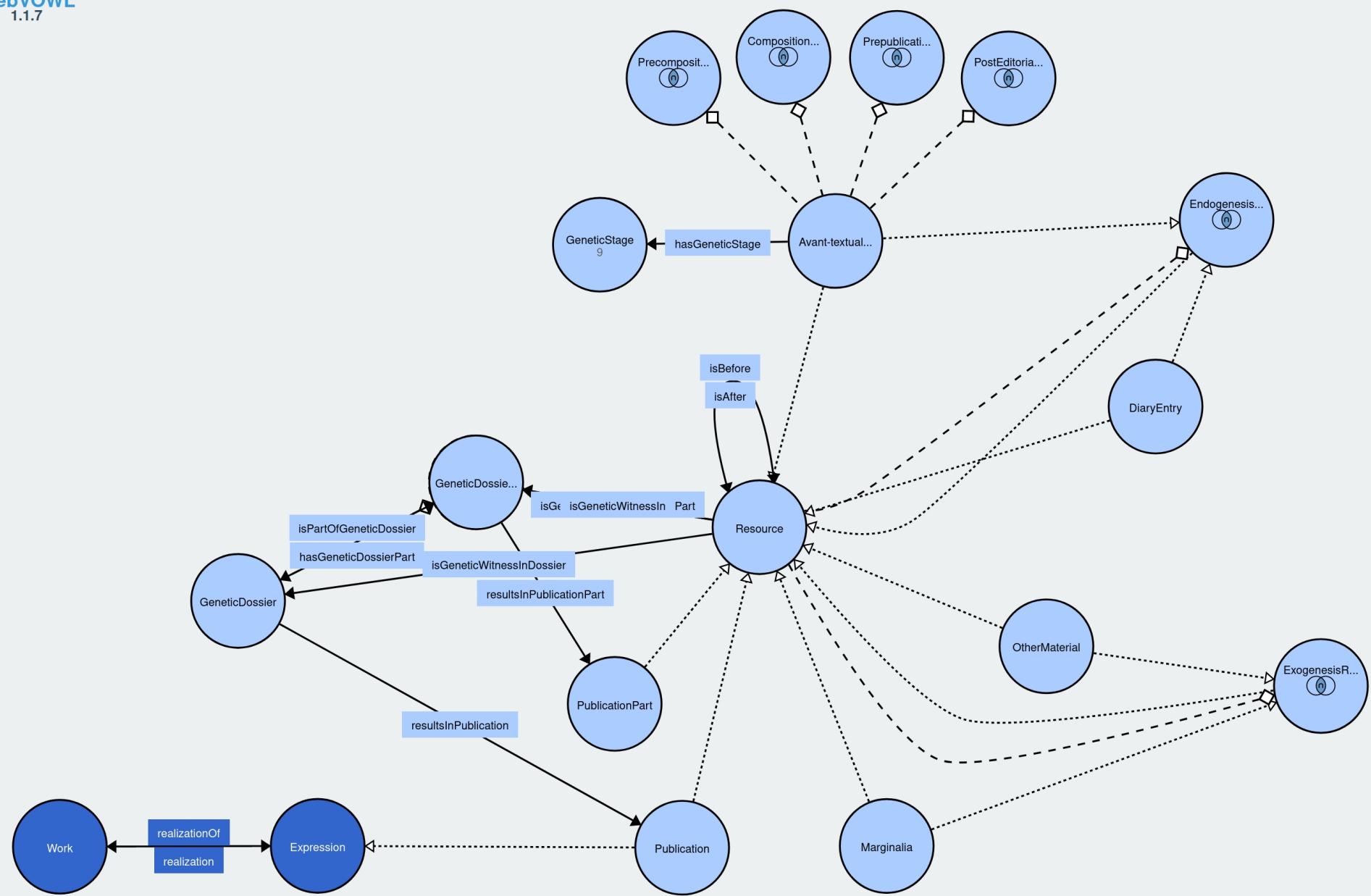
GENO, an ontology for the field of Genetic Criticism and Editing.



À propos

Technical documentation





CONCLUSIONS

COMBINATION OF XML/TEI AND RDF

is becoming mainstream or at least widely accepted
and sometimes practiced

“The DH community should indeed consider standing-off the idea that trees and graphs are fundamentally in opposition to one another. It should consider them rather as metaphors more helpful for one scholarly editing task than for others.”

Vogeler 2021

ADVANTAGES OF USING A SW APPROACH IN SCHOLARLY EDITING

- data is identifiable
- model is explicit
- query the semantic structure
- interpretation and text
- multilingualism
- machine readable
- linked data
- think beyond the document
- from digital library to knowledge graph

Thank you.

Bibliography

Slides: <https://doi.org/10.5281/zenodo.7867906>

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