

# COST Action Distant Reading for European Literary History

Corpus Design Principles and Challenges

## Distant *Reading*

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with Christof Schöch, Lou Burnard, Borja Navarro-Colorado et  
al.

PARTHENOS Workshop for CEE countries, 2019-10-08

# Outline

1. Schedule
2. COST Action Distant Reading and ELTeC
3. Corpus design
4. Introduction to XML and ELTeC TEI schema
5. Using TEI encoded texts
6. References

# Schedule

9:00-9:15	Introduction COST and ELTeC
9:15-9:30	Introduction Romanian novels / literary contexts
9:30-09:55	Corpus design
09:55-10:30	Romanian language collection
10:30-11:00	Break
11:00-12:00	Introduction to TEI XML and ELTeC schema
12:00-13:00	Transcribus demonstration

# Schedule

## Goals of our sessions

- ▶ Present our research approach in Digital Humanities
- ▶ Concepts on corpus design and annotation model
- ▶ Language-specific contexts on text selection and balancing
- ▶ First steps encoding TEI XML
- ▶ First steps text digitization with Transcribus
- Focus on data design and creation
- Looking forward to discussing each part in the break out sessions!



# Introduction

## Corpus linguistics

Every linguistic analysis is an interpretation of the data.  
(Lüdelling 2011)

## Digital literary studies

Two scholars can read the same dataset - like the same literary work - and derive different meanings.  
(Bode 2018)

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- ▶ COST Actions are research networks<sup>1</sup>
  - ▶ for any scientific field,
  - ▶ for workshops, conferences, working group meetings, training, schools, short-term scientific missions, and dissemination and communication activities,
  - ▶ for fostering Inclusiveness Target Countries (ITC).
- ▶ Each country member has a national supporting institution

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<sup>1</sup>[www.cost.eu](http://www.cost.eu)

# Distant Reading

- ▶ Christof Schöch, University of Trier
- ▶ CA16204 will
  - ▶ “create a vibrant and diverse network of researchers jointly developing the resources and methods necessary to change the way European literary history is written”
  - ▶ “contribute to the development and distribution of methods, competencies, data, best practices, standards and tools relevant to Distant Reading research”<sup>2</sup>
- ▶ Working groups
  - ▶ WG 1: Scholarly Resources
  - ▶ WG 2: Methods and tools
  - ▶ WG 3: Literary Theory and History
  - ▶ WG 4: Dissemination

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<sup>2</sup>[www.distant-reading.net](http://www.distant-reading.net)

# COST Action Distant Reading



<sup>3</sup><https://www.distant-reading.net/about/network/>

# WG1 Scholarly Resources

- ▶ Creating an open source multi-lingual benchmark corpus for European literature: European Literary Text Collection (ELTeC)<sup>4</sup>
- ▶ (currently) 34 Members of 22 countries
- ▶ Main tasks are
  - ▶ defining corpus design,
  - ▶ developing basic encoding schemas,
  - ▶ developing workflows.

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<sup>4</sup><https://www.distant-reading.net/wg-1/>

- ▶ Digitized and annotated European novels of the 19th century
- ▶ Uniform sampling and balancing criteria
- ▶ Uniform and consistent encoding schemas in TEI XML
  - ▶ Basic encoding to facilitate distant reading
  - ▶ Applicable for different languages
  - ▶ Currently working on English, German, French, Spanish, Italian, Romanian, Slovenian, Polish, Hungarian, Portuguese, Serbian, Greek, Norwegian, Czech

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Historical corpora (cf. for example Claridge 2008; Kytö 2011)

- ▶ Digitized and annotated (encoded) historical texts
- ▶ Resources with a complex publication history and often conflicting texts definitions (cf. for example Caton 2013; De Rose et al. 2002; van Zundert and Andrews 2017)
- ▶ Diverse methods and approaches towards corpus creation in relation to corpus architecture, annotations etc.
- ▶ Widely-used complex subtype of text corpora in (digital) humanities

# Corpus design

Corpus design defines two things (cf. a.o. Hunston 2008; Lüdeling et al. 2016):

- ▶ Candidates: Which text(s) can be included in the corpus?  
Which don't?
- ▶ Proportion: How many texts with which characteristics should the corpus contain?

## Corpus design – Action's purpose

- ▶ Benchmark corpus for distant reading
- ▶ Methods for data creation and analysis, e.g.
  - ▶ Part-of-speech tagging
  - ▶ Lemmatization
  - ▶ Morphological information
  - ▶ Authorship attribution
  - ▶ Network analysis
  - ▶ Topic modelling
  - ▶ Sentiment analysis

## Corpus design – challenges

- ▶ Different publication histories in Europe
- ▶ Different literary scholars and traditions
- ▶ Accessibility of information and resources

Is it possible to define criteria for selecting novels from all over Europe?

# Corpus design – Action's approach

- ▶ Sampling and balancing criteria<sup>5</sup> will
  - ▶ not define what a novel is,
  - ▶ follow a non-normative but metadata-based approach (not canon-based),
  - ▶ aim to represent the variety of a population<sup>6</sup>,
  - ▶ allow for a comparability of texts and individual sub-collections according to different metadata set(s).

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<sup>5</sup>[https://distantreading.github.io/sampling\\_proposal.html](https://distantreading.github.io/sampling_proposal.html)

<sup>6</sup>Cf. for discussion of representativeness Biber (1993) and canonicity (Herrmann 2011) and corpus design Algee-Hewitt and McGurl (2018), Bode (2018), Hunston (2008), and Lüdeling et al. (2016).

## ELTeC – sampling criteria

- ▶ language: European languages, no translations
- ▶ prose: narrative fictional prose
- ▶ period: 1840-1920
- ▶ length: min. 10.000 words
- ▶ publication: prefer books over novels published in serial publications
- ▶ access: only freely available digitizations

## ELTeC – balancing criteria

- ▶ 100 texts per language (language collection)
- ▶ period: distribution over time
  - ▶ T1: 1840-1859
  - ▶ T2: 1860-1879
  - ▶ T3: 1880-1899
  - ▶ T4: 1900-1920
- ▶ gender: min. 10% and max. 50% have been written by female authors for the language subcollection
- ▶ authorship: 9 - 11 authors with exact three novels
- ▶ length: min. 20% are short novels (10-50k word tokens), min. 20% are long novels (>200k word tokens).
- ▶ reprint: min. 30% are highly canonized novels, min. 30% should be non-canonized novels, based reprint counts within the period 1970-2009

## ELTeC – current state

Overview on ELTeC Language Collections:

<https://distantreading.github.io/ELTeC/index.html>



# Research data management for ELTeC

- ▶ “Research data management is an explicit process covering the creation and stewardship of research materials to enable their use for as long as they retain value.” Whyte, A. and Rans, J., Glossary of Digital Curation Center<sup>7</sup>
- ▶ (meta) data should findable, accessible, interoperable and reusable (Wilkinson et al. 2016)

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<sup>7</sup><http://www.dcc.ac.uk/digital-curation/glossary#R>

# Research data management for ELTeC

- ▶ Data creation and update on GitHub<sup>8</sup>
- ▶ Encoding schema developed and documented with TEI ODD<sup>9</sup>
- ▶ Data and workflow documentation on GitHub<sup>10</sup>
- ▶ Persistent referencing and archiving on Zenodo<sup>11</sup>
- ▶ Free licence to foster re-usability: CC-BY 4.0<sup>12</sup>
- ▶ Further dissemination strategies are currently evaluated

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<sup>8</sup><https://github.com/COST-ELTeC>

<sup>9</sup>ODD <https://github.com/distantreading/WG1/> and schema  
<https://github.com/COST-ELTeC/Schemas>

<sup>10</sup><https://github.com/distantreading/WG1/wiki>

<sup>11</sup><https://zenodo.org/communities/eltec/>

<sup>12</sup><https://creativecommons.org/licenses/by/4.0/>

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# Corpus data

- ▶ Different starting points for data creation, e.g.:
  - ▶ Exemplar of the book
  - ▶ Digitized book
  - ▶ Plain text
  - ▶ Previously encoded data set
- ▶ Metadata describe the digital or/and analogue source(s) of the data set
  - ▶ Library catalogues
  - ▶ Online databases for texts, ebooks, corpora

## Encoding | Annotation

- ▶ Annotation: explicit assignment of categories to one or more exponents in a corpus, always interpretation (c.f. a.o. Lüdeling 2011; McEnery and Hardie 2012; Zinsmeister et al. 2008)
- ▶ Tag set and guidelines: defining categories (and values) and formulate guidelines on how and when to assign them
- ▶ Motivation: Research question/context!

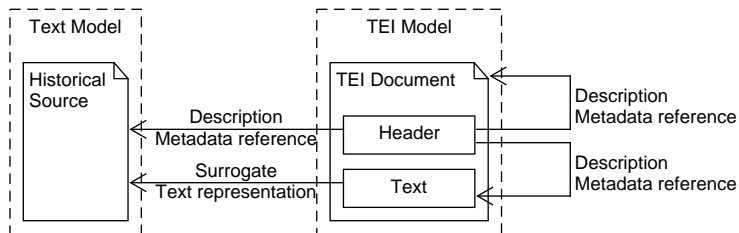
## XML Extensible Markup Language

- ▶ W3C standard since 1998
- ▶ For structuring and organizing information.
- ▶ Metalanguage for defining domain-specific XML vocabularies  
→ TEI XML

# Text Encoding Initiative

- ▶ Encoding standard and guidelines for the representation of texts for humanities
- ▶ TEI consortium (since 1987) for developing and maintaining the standard (TEI-Consortium 2019)
- ▶ For various texts, e.g. manuscripts and prints, books, letters, poems, and dictionaries
  - ▶ Text-internal categories, text-external categories
  - ▶ Mark up, text structure(s) and divisions, content and references
- ▶ Guidelines provide ca. 500 elements and various specifying attributes

# TEI document



- ▶ Consist of `teiHeader` and `text`
- ▶ Text contains e.g. `front`, `body`, `trailer`, `back`
- ▶ Customization TEI for domain-specific purpose (e.g. select elements and attributes, building subsets, defining new elements)
- ▶ Validation mechanisms
- ▶ Customization, documentation and validation via ODD (Burnard and Rahtz 2004)



# TEI XML

- ▶ start tag:
    - ▶ `<title>`
  - ▶ end tag:
    - ▶ `</title>`
  - ▶ single composite tag:
    - ▶ `<lb/>`
  - ▶ attributes
    - ▶ `type="..."`
- Hierarchy of XML elements

# Encoding XML

- ▶ We start with plain text (e.g. transcribed, OCR)
- ▶ We will encode manually<sup>13</sup>
- ▶ data for tutorial on <https://github.com/distantreading/WG1/tree/master/Training/2019-10-08-Sofia>

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<sup>13</sup>Many approaches on transformation processes, see e.g. Distant Reading Training School Budapest 2019

## XML – post card example

Warm greetings  
from Sofia  
Carolin

# XML – example

- ▶ Open start.xml
- ▶ Encode
  - ▶ line
  - ▶ place
  - ▶ name

# Hands on tutorial – data creation

- ▶ How do we encode texts for ELTeC?
- ▶ First steps: using TEI XML
- Today's examples (taken from ELTeC)
  - ▶ *Why Paul Ferroll Killed His Wife* by Clive, Caroline, (1801-1873) Saunders, Otley, and Co. London 1860.
  - ▶ *Alice's Adventures in Wonderland*, by Lewis Carroll, (1832-1898).London: Macmillan 1865.

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## CHAPTER I. Down the Rabbit-Hole

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversations?'

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

Figure: Gutenberg ebook Produced by Arthur DiBianca and David Widger. [Gutenberg ebook](#)

```
<div type="chapter">
<head>CHAPTER I. Down the Rabbit-Hole</head>
<p>Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversations?'</p>
<p>So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.</p>
```

## CHAPTER I.

A LONG gallery opening on each side to small rooms gave the inhabitants of St. Cécile's Monastery access both to them and to the larger apartment which was inhabited by the Reverend Mother herself. This latter room was of an oblong shape, very bare of furniture, and of all kinds of decoration. The

Figure: Google's digitization of the novel. [Google book](#)

```
<head>CHAPTER I.</head>
```

```
<p><hi>A LONG</hi> gallery opening on each side to small rooms gave the inhabitants of St. Cécile's Monastery access both to them and to the larger apartment which was inhabited by the Reverend Mother herself. This latter room was of an oblong shape, very bare of furniture, and of all kinds of decoration. The windows were
```

Figure: ELTeC text in English language collection [ELTeC version](#)

# Defining encoding schema

- ▶ Brain storming:  
Which text features can to be encoded for analysing European novels?



# ELTeC metadata

- ▶ `teiHeader`
  - ▶ Bibliographic information
  - ▶ Balancing information
  - ▶ Data processing information

# ELTeC encoding

- ▶ text
  - ▶ paragraphs
  - ▶ highlighted
  - ▶ head
  - ▶ division
  - ▶ chapter
  - ▶ page breaks
  - ▶ ...

# ELTeC encoding schemas

- ▶ Not to represent texts in all their original complexity<sup>14</sup>
- ▶ Not aiming for duplicating the work of scholarly editors
- ▶ Aim to facilitate a richer and better-informed distant reading than a transcription of lexical content alone would permit
- ▶ Encoding levels (via ODD chaining)
  - ▶ level0: basic encoding
  - ▶ level1: richer encoding
  - ▶ level2: tokenization and linguistic annotation (work in progress)

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<sup>14</sup>cf. contribution to TEI Conference 2020 Burnard, Schöch and Odebrecht  
<http://gams.uni-graz.at/context:tei2019>

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## Current state

ELTeC Language Collections:

<https://distantreading.github.io/ELTeC/index.html>

# Uniform text display

## Distant Reading

### *Alice's Adventures in Wonderland* : ELTeC edition

Carroll, Lewis [pseud.] (1832-1898).

**Responsibilities:** ELTeC conversion Lou Burnard

**Pages:** 26391

Published as part of ELTeC 2019-05-20

ELTeC is a scholarly resource created in the context of COST Action CA16204 "Distant Reading for European Literary History" (<https://www.distant-reading.net/>)

**Source(s):** *Alice's Adventures in Wonderland*, by Lewis Carroll[Gutenberg] *Alice's Adventures in Wonderland*, by Carroll, Lewis [pseud.] (1832-1898).London: Macmillan(1865)

**Language(s):** English

ALICE'S ADVENTURES IN WONDERLAND

By Lewis Carroll

THE MILLENNIUM FULCRUM EDITION 3.0

#### CHAPTER I. Down the Rabbit-Hole

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice "without pictures or conversations?"

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her:

## Distant Reading

### *Why Paul Ferroll Killed His Wife* : ELTeC edition

Clive, Caroline Wigley (1801-1873)

**Responsibilities:** Optically scanned, encoded, edited and proofed by Perry Willett

**Responsibilities:** E-text Editor Brian Norberg

**Responsibilities:** Corrected by Elizabeth Munson

**Words:** 56726

**Pages:** 334

Published as part of ELTeC

ELTeC is a scholarly resource created in the context of COST Action CA16204 "Distant Reading for European Literary History" (<https://www.distant-reading.net/>)

**Source(s):***Why Paul Ferroll Killed His Wife* : WW9 edition , by Clive, Caroline, 1801-1873Digital Library Program, Indiana UniversityBloomington, INV487194*Why Paul Ferroll Killed His Wife*, by Clive, Caroline, 1801-1873Saunders, Otley, and Co. London (1860)

**Language(s):**English

Why Paul Ferroll Killed His Wife.

by The Author of "Paul Ferroll."

"A man does not murder his wife gratuitously."—

Froude's Henry VIII.

Third Edition.

London: Saunders, Otley, and Co., Conduit Street

1860.

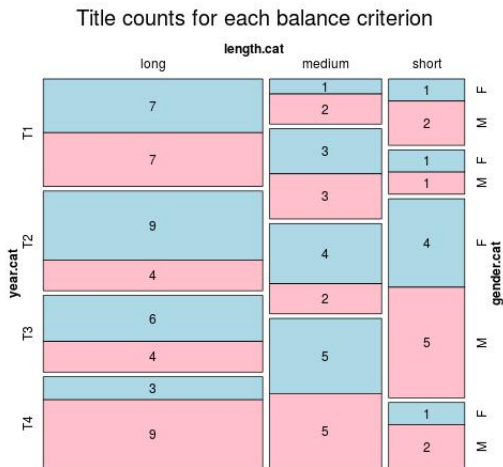
WHY PAUL FERROLL KILLED HIS WIFE.

#### CHAPTER I.

A LONG gallery opening on each side to small rooms gave the inhabitants of St. Cécile's Monastery access both to them and to the larger apartment which was inhabited by the Reverend Mother herself. This latter room was of an

Figure: Text display is based on TEI encoded files: **HTML version for Alice**, **HTML version for Paul**

# Metadata composition plot



**Figure:** ELTeC-eng: Metadata in `teiheader` are parsed for each encoded file. Data is aggregated and visualized for corpus monitoring. Produced with ELTeC metadata and R package `vcd` by David Meyer [aut, cre], Achim Zeileis [aut], Kurt Hornik [aut], Florian Gerber [ctb], Michael Friendly [ctb]<sup>16</sup>.

<sup>15</sup>

<sup>16</sup> <https://cran.r-project.org/web/packages/vcd/index.html>

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## References COST Action Distant Reading

- ▶ COST Action Distant Reading homepage  
<https://www.distant-reading.net/>
- ▶ Documentation on <https://distantreading.github.io/>
  - ▶ Corpus design
  - ▶ Encoding guidelines
  - ▶ Working Group
  - ▶ Training schools
- ▶ ELTeC on <https://github.com/COST-ELTeC>
- ▶ ELTeC releases on Zenodo  
<https://zenodo.org/communities/eltec/>

# References for introductions to XML and TEI

- ▶ Lou Burnard's [Introduction to oxygen](#)
- ▶ Martina Scholger's [Introduction to TEI XML](#)
- ▶ DARIAH's [Training Digital Editions](#)
- ▶ Lou Burnard's book on [What is the Text Encoding Initiative](#)
- ▶ [Customizing TEI with ODD](#)

# References I



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Herrmann, Leonhard (2011). "System? Kanon? Epoche?" In: *Kanon, Wertung und Vermittlung. Literatur in der Wissensgesellschaft*. Ed. by Claudia Stockinger Matthias Beilein and Simone Winko. Berlin: De Gruyter, pp. 59–75.



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Kytö, Merja (2011). "Corpora and historical linguistics". In: *Revista Brasileira de Linguística Aplicada* 11, pp. 417–457.

# References II



Lüdeling, Anke (2011). "Corpora in Linguistics. Sampling and Annotation". In: *Going Digital. Evolutionary and Revolutionary Aspects of Digitization*. Ed. by Karl Grandin. Vol. 147. Nobel Symposium 147. New York: Science History Publications, pp. 220–243.



Lüdeling, Anke, Julia Ritz, Manfred Stede, and Amir Zeldes (2016). "Corpus Linguistics". In: *OLP Handbook of Information Structure*. Ed. by Caroline Fery and Shinishiro Ishihara. Oxford: Oxford University Press, pp. 599–617.



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van Zundert, Joris and Tara L. Andrews (2017). "Qu'est-ce qu'un texte numérique? A new rationale for the digital representation of text". In: *Digital Scholarship in the Humanities* 32, pp. 78–88.



Wilkinson, Mark D., Michel Dumontier, Aalbersberg, I Jstrand Jan, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, Jan-Willem Boiten, da Silva Santos, Luiz Bonino, Philip E. Bourne, Jildau Bouwman, Anthony J. Brookes, Tim Clark, et al. (2016). "The FAIR Guiding Principles for scientific data management and stewardship". In: *Scientific data* 3, p. 160018.



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- **09:15-09:30: Roxana Patras**

Senior Researcher II/ Cercetator stiintific gr. II (CS II)  
Institute for Interdisciplinary Research  
“Alexandru Ioan Cuza” University of Iasi

**Introduction to Romanian novels/literary context  
Relevant to the Action’s goal (e.g. focus on previously non preferred  
periods)**

..		
ROM001_Anonim_MCP_ROSCAN_HAIDUCUL.xml	Add files via upload	17 days ago
ROM002_BalanescuSimion_BLESTEMUL.xml	reapply fix	17 days ago
ROM003_BalanescuSimion_SFARSITUL_BLESTEMULUI.xml	Add files via upload	17 days ago
ROM004_DumbravaBucura_HAIDUCUL.xml	Add files via upload	17 days ago
ROM005_MacriPanait_GHITA_CATANUTA.xml	Add files via upload	17 days ago
ROM006_PopescuND_IancuJianuZapciu.xml	Add files via upload	17 days ago
ROM007_PopescuND_IancuJianuCapitan.xml	Add files via upload	17 days ago
ROM008_PopescuND_BUJOR_HAIDUCUL.xml	Add files via upload	17 days ago
ROM009_MacedonskiA_Thalassa.xml	Add files via upload	17 days ago
ROM010_VlahutaA_Dan.xml	Add files via upload	17 days ago
ROM011_GrandeaG_Fulga.xml	Add files via upload	17 days ago
ROM012_GrandeaG_Vlasia.xml	Add files via upload	17 days ago
ROM013_IonescuR_LaGuraSobei.xml	Add files via upload	17 days ago
ROM014_IonescuR_CatastihulAmorului.xml	Add files via upload	17 days ago
ROM015_IonescuR_DonJuaniiBucuresti.xml	Add files via upload	17 days ago
ROM016_BolintineanuD_Manoil.xml	Add files via upload	17 days ago
ROM017_BolintineanuD_Elena.xml	Add files via upload	17 days ago
ROM018_BolintineanuD_DoritoriiNebuni.xml	Add files via upload	17 days ago
ROM019_VDemetrius_MateiDumbarau.xml	Add files via upload	13 days ago
ROM020_VDemetrius_OrasulBucuriei.xml	Add files via upload	13 days ago
ROM021_VDemetrius_PacatulRabinului.xml	Add files via upload	12 days ago
ROM022_PanaitMacri_HaiduculTandura.xml	Add files via upload	11 days ago
ROM023_Ighell_TilharulFulger.xml	Add files via upload	11 days ago
ROM024_DumbravaB_Pandurul.xml	Add files via upload	13 days ago
ROM025_Bujoreanu_MistereDinBucuresti.xml	Add files via upload	12 days ago
ROM026_MacriP_Bostan.xml	Add files via upload	11 days ago

## ELTeC Summary Page

As well as the following summary statistics, this page provides links to human-readable versions of each text currently included in the European Literary Text Collection ([ELTeC](#)). Click on a language code in the table below to see a list of texts now available in that language. Then click on the identifier of a text to see a simple rendering of the text as produced by [CETIcean](#). The original source files are stored in a GitHub repository at [COST-ELTeC](#), and may be downloaded freely from there.

Please note : this is a work in progress! Comments and reports of any problems are much appreciated: send them to the [WG1 Issue Tracker](#).

Language	Texts	Words	Male	Female	Short	Medium	Long	1840-59	1860-79	1880-99	1900-20
<a href="#">cze</a>	23	692936	21	2	20	3	0	8	9	6	0
<a href="#">deu</a>	44	8422194	27	17	13	16	15	13	8	14	9
<a href="#">eng</a>	91	11990064	46	45	17	25	49	20	21	25	25
<a href="#">fra</a>	92	6939456	57	35	25	45	22	16	31	32	13
<a href="#">gre</a>	11	42524	10	1	11	0	0	0	1	6	4
<a href="#">hun</a>	102	7641508	86	16	46	33	23	24	24	25	29
<a href="#">ita</a>	34	3328244	32	2	13	10	11	5	12	10	7
<a href="#">nor</a>	27	1114092	22	5	18	9	0	2	2	19	4
<a href="#">por</a>	57	3685825	46	11	27	20	10	8	18	13	18
<a href="#">rom</a>	26	1196258	23	2	17	8	1	1	9	10	6
<a href="#">slv</a>	72	3894267	65	7	37	32	3	0	4	30	38
<a href="#">spa</a>	19	2022041	15	4	4	11	4	5	10	3	1
<a href="#">srp</a>	29	1087455	25	4	20	9	0	0	1	12	16

Last updated: 2019-10-03

Activate Windows  
Go to Settings to activate Windows.

TEI text body div head

```
78 <head>CATASTIHUL AMORULUI</head>
79 <head>O PREFAȚĂ CARE NU ESTE PREFAȚĂ</head>
80 <div><p>Scena se petrece în capul servitorei dumneavoastră.</p>
81 <p>La dreapta și la stîngă paradoxo, reflecțiuni, proiecte, fragmente începutel, suvenir, speranțe, căințe.</p>
82 <p>în scurt niște mobile de simpli creeri, dar de ajuns.</p>
83 <p>Așezat înaintea unei mese, eu privesc cu un aer mulțumit un splendid soare care se joacă printre sticlele ferestrei mele.</p>
84 <p>În acest timp, următorul dialog se angajează între oaspeții creerilor mei, al căror scurt inventar avui plăcere a vi-l așterne mai
84 sus.</p></div>
85
86 <div><label>Lenea</label>
87 <p>Ce frumoasă, ce veselă zi! Bătrînii arbori din Băneasa cată să aibă în această dimineață reflecte de sărbătoare... Ia-ți pălăria, bastonul
87 și vino cu mine, tu.</p></div>
88
89 <div><label>Rațiunea</label>
90 <p>N-o asculta! Editorele tău așteaptă, chiar în această dimineață, primele făscioare ale cărții ce tu i-ai promis. Au să mai fie zile
90 frumoase! N-o asculta!</p></div>
91
92 <div><label>Lenea</label>
93 <p>Mîine va ploua, — și așa două lune necurmat... Ce mai lucru, cînd vei înegri cîteva pagine din o hîr-tie neofensivă; nu-ți este rușine să
93 preferi frumusețile îndoioase ale stilului tău, splendorilor strălucitoare ale naturei. Eu d-aci văd eîmpiile în cari înverzește griul nou.
93 Masa e pusă la birt. Cotleta cîntă, frigîndu-se. Hossanah al lăcomiei! Vinul rîde în vesela butelie... Să plecăm, îți zic, și dă dracului
93 secătura ta de volum!</p></div>
94
95 <div><label>Vanitatea</label>
96 <p>Secătură! ... secătură! ... Lesne de zis.</p></div>
97
98 <div><label>Rațiunea</label>
```

Text Grid Author

Activate Windows

Go to Settings to activate Windows.



## Cultural context (1840-1920): traditional periodization vs. ELTeC sampling principles

<p>1840-1859 (48 revolution)</p> <p><b>ELTeC t1 = 1840-1859</b></p>	<p>1860-1866 (post-48 revolution) 1866-1880 (Junimea age)</p> <p><b>ELTeC t2=1860-1879</b></p>	<p>1880-1900 (Literatorul + Contemporanul)</p> <p><b>ELTeC t3=1880-1899</b></p>	<p>1900-1918 (Samanatorul + Viata Romaneasca) 1905-1920 (Belle Epoque/Symbolism)</p> <p><b>ELTeC t4=1900-1920</b></p>
<p>-National, unionist movement: Wallachia and Moldavia which were semi-autonomous provinces (Ottoman Empire and other empires interested in the geo-strategic position of the 2 principalities) -UNION of 1859 (national culture and literature = Romanian language)</p>	<p>-Romanian prince (1859-1866) -German prince (starting in 1866) parliamentarianism; state modernization; rural to city life  -The war of independence in 1877</p>	<p>-proclamation of the Romanian kingdom (German dynasty) -rise of socialism</p>	<p>-the peasants' riot in 1907 -national movement (union with Transylvania)</p>

<p>1840-1859 (48 revolution)</p> <p><b>ELTeC t1 = 1840-1859</b></p>	<p>1860-1866 (post-48 revolution) 1866-1880 (Junimea age)</p> <p><b>ELTeC t2=1860-1879</b></p>	<p>1880-1900 (Literatorul + Contemporanul)</p> <p><b>ELTeC t3=1880-1899</b></p>	<p>1900-1918 (Samanatorul + Viata Romaneasca) 1905-1920 (Belle Epoque/Symbolism)</p> <p><b>ELTeC t4=1900-1920</b></p>
<p>Greek influence vs. intelligentsia educated in France and Germany brought in progressist views which culminated in the 1848 Revolution (late Enlightenment + Romanticism)</p>	<ul style="list-style-type: none"> <li>-Imports from Western literary traditions (forms, styles, manners)</li> <li>-The obsession of the language's <i>genius</i> + national literature (original)</li> <li>-aestheticism</li> </ul>	<ul style="list-style-type: none"> <li>-a socially-oriented literature</li> <li>-modernism</li> </ul>	<ul style="list-style-type: none"> <li>-a nationally oriented literature</li> <li>-aesthecization of daily life</li> </ul>

<p><b>1840-1859</b> <b>(48 revolution)</b></p> <p><b>ELTeC t1 = 1840-1859</b></p>	<p><b>1860-1866</b> <b>(post-48 revolution)</b> <b>1866-1880</b> <b>(Junimea age)</b></p> <p><b>ELTeC t2=1860-1879</b></p>	<p><b>1880-1900</b> <b>(Literatorul +</b> <b>Contemporanul)</b></p> <p><b>ELTeC t3=1880-1899</b></p>	<p><b>1900-1918</b> <b>(Samanatorul + Viata</b> <b>Romaneasca)</b> <b>1905-1920</b> <b>(Belle Epoque/Symbolism)</b></p> <p><b>ELTeC t4=1900-1920</b></p>
<p>Print culture: religious and lay texts in Romanian but printed in the Cyrillic alphabet; transition alphabet or Latin alphabet</p>	<p>Print culture: dominated by lay texts in Romanian but printed in the transition alphabet or Latin alphabet</p>	<p>Print culture: lay texts printed in non-standardized variants of Romanian (lack of consistent norms)</p>	<p>Print culture: lay texts printed in non-standardized variants of Romanian (norms)</p>

# “Birth certificates” of Romanian novels

INSTALMENT: *Pustnicul* by GRAF Valberg [Mihail KOGĂLNICEANU],  
1844, incomplete novel

VOLUME: *Elvira sau amorul fără de sfârșit. Romans original* by D.F.B.,  
85 p, 1845, complete but too short novel

## The Romanian Novel in figures relevant for ELTeC sampling (1840-1920)

- 350 novels published in volumes
- 279 novels published in instalments

Note that current data on Romanian novels also include items written in other languages (French, German) by “Romanian” authors, then imported into Romanian as a new version or translation.

*From 350 volume-novels:*

- 37 are written by women (10.5%)
- Between 20 and 30 have been subject to constant reprint/ canonization (5.6%-8.5%)
- Around 100 novels are adventure novels (hajduk + city mysteries), thus short novels (28%)

1/3 of the Romanian novels published in volumes should go into ELTeC (100 novels per each collection)

Is that possible?

09:50-10:20: Roxana Patras

Romanian Language collection.

Specific characteristics and challenges for selecting and digitizing novels



## How to... Build a National novel collection?





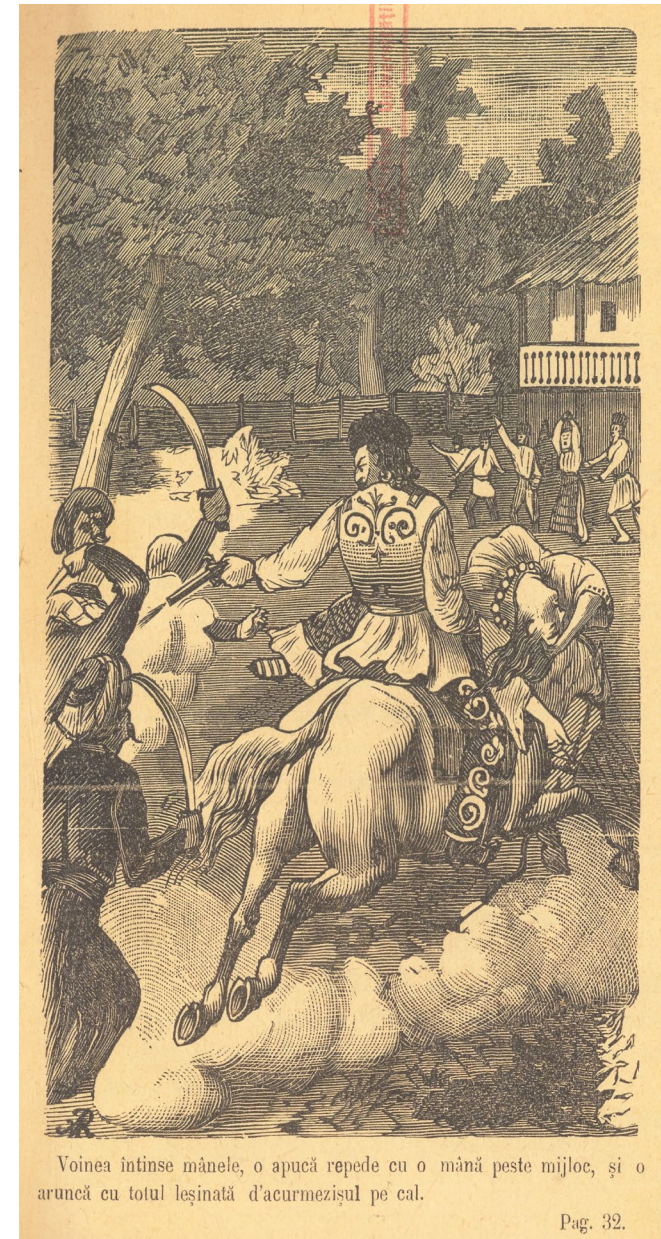
# Drawback 1: DIGITIZATION from scratch

The Romanian Collection of ELTeC starts from facsimiles:

- we scan (very fragile) books
- OCR (when possible)
- convert them into xml (automatically when scripts are available, manually when scripts aren't really reliable)
- A toilsome process of manual cleaning
- Encode files into TEI



# Samples I: printing popular books in 19th-century Romania





Samples II: take a close look at the glyphs  
How does OCR perform on this type of print?

Crima misterioasă din calea Mogoşoiei

**Siluirea**

E noapte.

Să ningă încetase și cerul ca și pământul pare înghețat.

E noapte, târziu de tot și cu toate astea într'una din casele din calea Mogoşoiei lumina ardea încă:

Casa are un aspect frumos, ea e văpsită cu galben și zidăria de și e destul de veche, cu toate astea o reparație făcută de curând îi dă o aparență solidă și frumoasă.

Lumina ardea într'o cameră din etagiul al doilea; afară de această cameră tot restul apartamentului era în întuneric și tăcere.

Afară domnea un frig teribil și zăpada era mare, căci totă ziua ninsese. În timpul acesta

— 5 —

Mândria lui îl stăpânea și la cazarmă și nu putea să sufere cea mai mică observație a căpitanului Lambru, ci răspundea cu obrăznicie, din care cauză era rău persecutat. Persecuțiile deveniră atât de amare pentru Dragoș, în cât își jură să deserteze și să își răsbune mai târziu pe căpitanul Lambru.

Cât timp a stat în cazarmă, nu legase prietenie cu nimenea de cât cu un ore-care Ión Emanoil, supranumit Mână lungă, care se asemena cu Dragoș în privința caracterului, ca două picături de apă. Intre omeni de acelaș caracter, învoeala se face în două vorbe. Se hotărâseră deci să dezerteze amândoi de odată, și de ore-ce erau isteți, după cum am mai spus, nu fuse trebă mare să găsească un mijloc bun și iată'i deci pe amândoi liberi, înarmați până'n dinți și pregătiți cu haine și rufe pe cari avuseseră grije să și le cumpeie mai din'nainte și luând drumul către pădurea Nicoresci.

—◆◆◆ Finele Prologului ◆◆◆—









# OCR output: absolutely unreliable

C:\Users\roxana\Documents\proiecte - finantari\PARTHENOS\aldo aminta.htm (CORPUS\_MISTERE\_19\_output) - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

FOLDERS

CORPUS\_MISTERE

```
1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"
2 "http://www.w3.org/TR/html4/loose.dtd">
3 <html>
4 <head><meta http-equiv="content-type" content="text/html; charset=UTF-8"/><meta name="generator" content="
ABBY FineReader 12"/><meta name="author" content="roxana patras"/><link rel="stylesheet" href="aldo
aminta_files/aldo aminta.css" type="text/css"/>
5 </head>
6 <body>
7 <p><span class="font3" style="font-weight:bold;">SAU</span></p>
8 <p><span class="font3" style="font-weight:bold;">—&lt;&amp;&amp;&amp;,$&amp;&amp;&amp;&gt;—</span></p><a name
="caption1"></a><h1><a name="bookmark0"></a><span class="font1">PABTEA I.</span></h1>
9 <p><span class="font3" style="font-weight:bold;">Les actions des hommes sont une semence fécondejépandue
sur les champs obscurs de l'avenir, confiée avec espérance aux divinités fatales.</span></p>
10 <p><span class="font3" style="font-weight:bold;font-style:italic;">Schiller.</span></p><h2><a name="
bookmark1"></a><span class="font0">I.</span></h2>
11 <p><span class="font4">Timnblb ns a rpT.im.dit8 atiijea ani în memopia aqe-l»ia qe sbsnim., de kind
fie-kape Baie a ijirani^ilop Kap-naiji epa o foptepegi» nibnih. de natsp't a xaldbqilop nompi; de kind
fie-kape qiim» skotea bris eko ka si. pisenbnzT. la&nbsp;Boqea Epaoilop, qe înkinas în s^nitatea kinitanblbl
lop,&nbsp;mi kblmea Beqim», peBir.pîndb-o, o penbpta kb dparb ast-felb mm la Bbqeqi.</span></p>
12 <p><span class="font4" style="font-weight:bold;">Totb se mai yine 'n leidende Biptbtea momilop no-mtpi,
lokblb tpibrnfbblbi lop, mi onoapea a mal rnbltop sne-lsnqe, lokb de skinape alb </span><span class="font2"
style="font-weight:bold;">Bp'biibi </span><span class="font4" style="font-weight:bold;">epob;</span></p>
13 <p><span class="font4" style="font-weight:bold;">Dap bitapea din zi în zi kpeuite, mi memopia tpe-</span></p>
14 </body>
15 </html>
```

Activate Windows  
Go to Settings to activate Windows.

Line 1, Column 1

Tab Size: 4 HTML

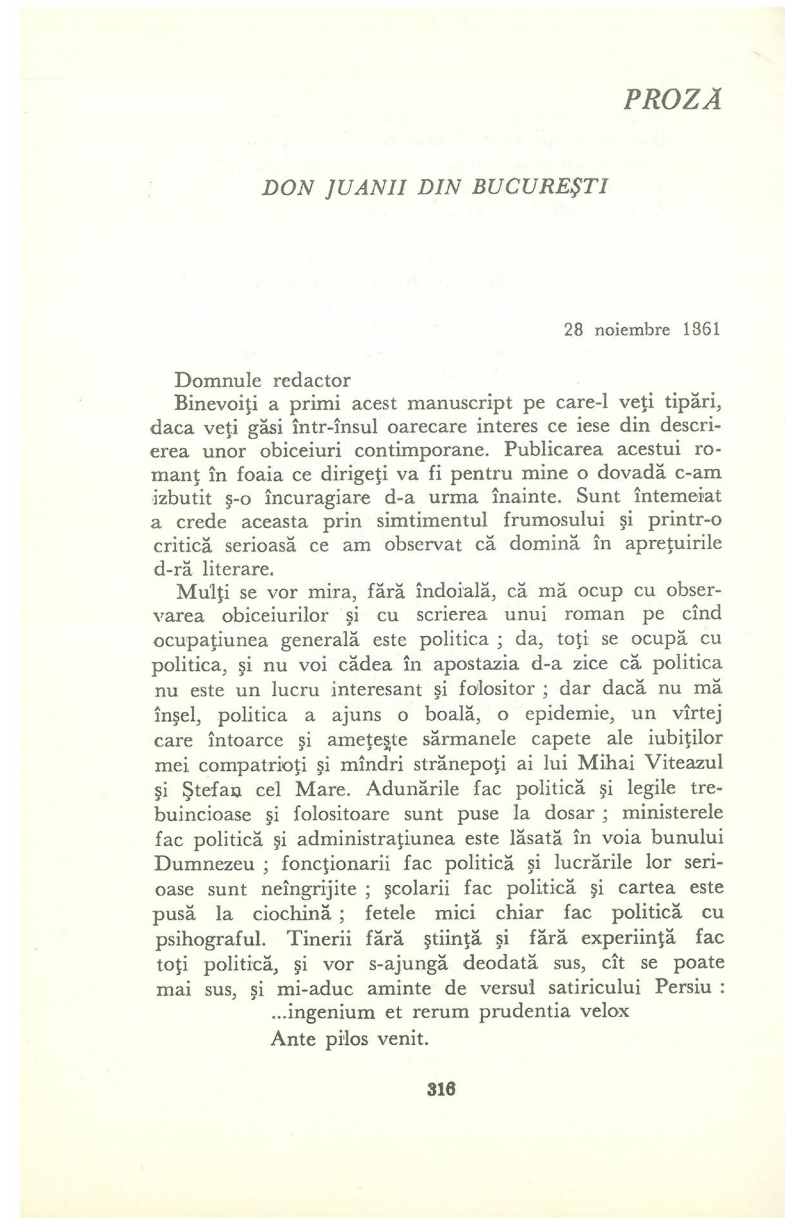
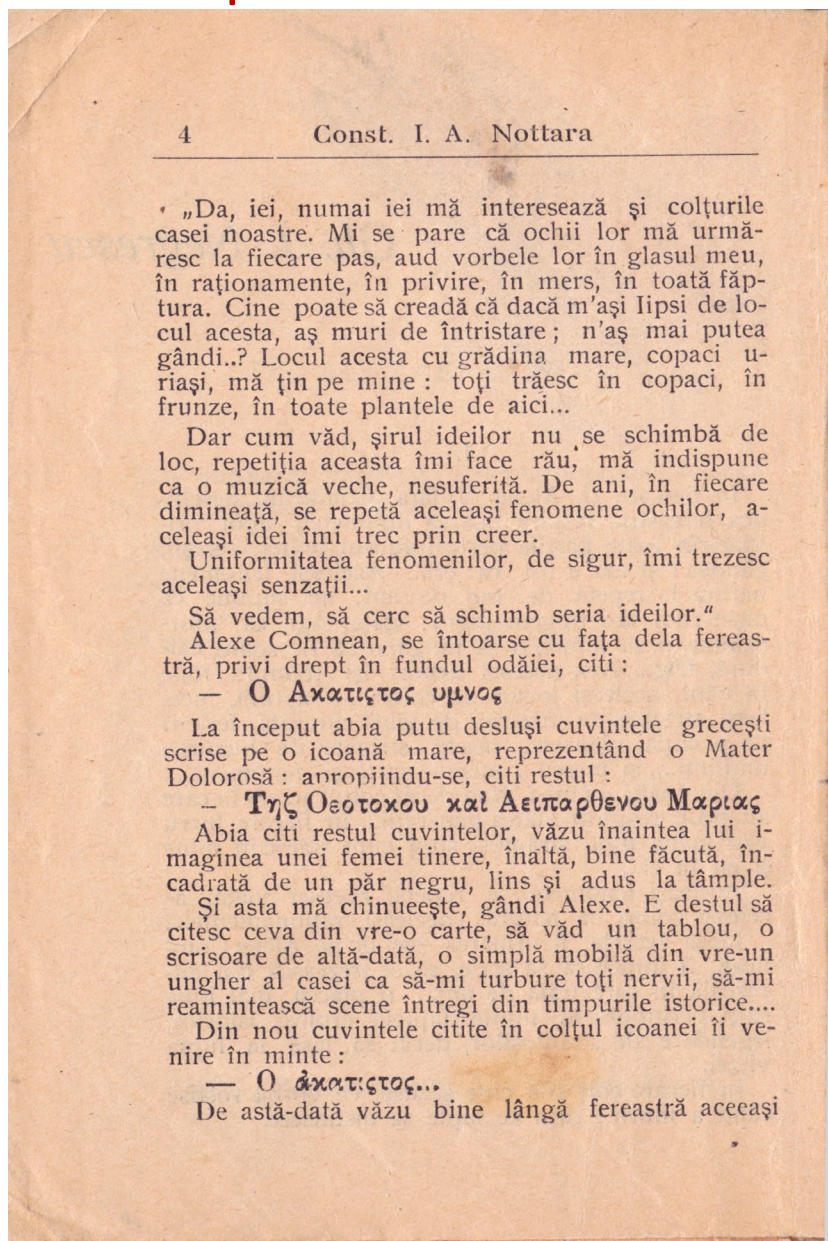
Type here to search

Show hidden icons ROU 13:03  
ROS 05/10/2019



# Some normal and, of course, normalized texts

## Books published between 1920-1945 & scholarly editions published between 1950-1989



## Drawback II: TEI HEADER – particularities

Referencing facsimiles on zenodo <https://zenodo.org/record/3229284>

ROM014\_IonescuR\_CatastihulAmorului.xml x ROM015\_IonescuR\_DonJuaniiBucuresti.xml x

TEI teiHeader fileDesc extent measure

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <?xml-model href="eltec-1.rng" type="application/xml" schematypens="http://relaxng.org/ns/structure/1.0"?>
3 <TEI xmlns="http://www.tei-c.org/ns/1.0" xmlns:e="http://distantreading.net/eltec/ns" xml:id="ROM015_IonescuR_DonJuaniiBucuresti" xml:lang="ro">
4 <teiHeader>
5 <fileDesc>
6 <titleStmt>
7 <title> Don Juanii din București: ediție ELTeC</title>
8 <author> Ionescu, Radu (1834-1872)</author>
9 <respStmt>
10 <resp>Codare ELTeC</resp>
11 <name>Roxana Patras</name>
12 </respStmt>
13 </titleStmt>
14 <extent>
15 <measure unit="words">22860</measure>
16 <measure unit="pages">67</measure>
17 </extent>
18 <publicationStmt>
19 <p>Încorporat în ELTeC <date>2019-08-28</date></p>
20 </publicationStmt>
21 <bibl type="printSource">
22 <author>Radu Ionescu</author>
23 <title>Don Juanii din București</title>
24 <pubPlace>Bucharest</pubPlace>
25 <publisher>Editura Minerva</publisher>
26 <date>1974 (1861-1862)</date>
27 <idno type="DOI">10.5281/zenodo.3229285</idno>
28 </bibl>
29 </fileDesc>
30 </teiHeader>
```

Text Grid Author

Activate Windows  
Go to Settings to activate Windows.



```
TEI teiHeader fileDesc extent measure
2 <?xml-model href="eltec-1.rng" type="application/xml" schematypens="http://relaxng.org/ns/structure/1.0"?>
3 <TEI xmlns="http://www.tei-c.org/ns/1.0" xmlns:e="http://distantreading.net/eltec/ns" xml:id="ROM015_IonescuR_DonJuaniiBucuresti" xml:lang="ro">
4 <teiHeader>
5 <fileDesc>
6 <titleStmt>
7 <title> Don Juanii din București: ediție ELTeC</title>
8 <author> Ionescu, Radu (1834-1872)</author>
9 <respStmt>
10 <resp>Codare ELTeC</resp>
11 <name>Roxana Patras</name>
12 </respStmt>
13 </titleStmt>
14 <extent>
15 <measure unit="words">22860</measure>
16 <measure unit="pages">67</measure>
17 </extent>
18 <publicationStmt>
19 <p>... 28</date></p>
20 </publicationStmt>
21 <sourceDesc>
22 <bibl type="printSource">
23 <author>Radu Ionescu</author>
24 <title>Don Juanii din București</title>
25 <pubPlace>Bucharest</pubPlace>
26 <publisher>Editura Minerva</publisher>
27 <date>1974 (1861-1862)</date>
28 <ref target="https://zenodo.org/record/3229286">Facsimile on zenodo</ref>
29 </bibl>
```



Text Grid Author

Activate Windows  
Go to Settings to activate Windows.

Search: [Next] [Previous] [All]  Incremental  Case sensitive | [Close]



**Drawback III: The Splendors and  
Miseries of Digital Literary Studies in  
Romania in 2019**

**or**

**A Harlot High and Low**

- **treatment of metadata rather than data:**

a plethora of recent studies strongly rely on a basic counting of metadata provided by the entries in various dictionaries and lexicons (e.g. Transylvanian Review, vol XXXVIII, supplement no. 1, 2019,

- *Romanian Literature in the Digital Age*)

- **strong focus on post-45 Romanian literature and on non-literary corpora:**

Corpora such as ROMBAC, RODICA, and so forth

- low digitization of both resources and library metadata: e.g. partially digitized catalogue of the Library of the Romanian Academy;
- dacoromanica platform not really functional;
- shy initiatives started by university libraries, but no interoperable formats (xml, txt, epub)
- incomplete references of this literary span (1840-1920) in Worldcat & others
- Romanian corpora haven't included enough literary texts and if they have, texts were selected from those published after 1945 (standardized Romanian)
- books indexed in older printed catalogues may not have survived (books to be scanned are fragile and not suited for regular scanning)
- no lemmatizers and POS taggers for diachronic varieties of Romanian (thus automatic analysis functions suboptimally)

## Briefly...

### Creating such a collection feels like writing fixed verse: align resources to sampling principles

- at least 10%-50% have been written by female authors for the language subcollection.
- 9 to 11 authors are represented with exact three novels.
- at least 30% are highly canonized novels, at least 30% should be non-canonized novels, based on the following reprint groups: reprinted not at all, reprinted once, reprinted more than once within the period 1980-2000
- at least 20% are short novels (10-50k word tokens), at least 20% are long novels (>100k word tokens).

Date : 1840 to 1920 (first iteration)

We will divide into four groups

- group A (1840-1859): code T1
- group B (1860-1879): code T2
- group C (1880-1899): code T3
- group D (1900-1920): code T4



# Output of Romanian novels vs. ELTeC groups (Time Slots): culturally determined unbalance of a literary corpus

	T1 (1840-1859)	T2 (1860-1879)	T3 (1880-1899)	T4 (1900-1920)
Total no	11	38	120	181
Transition Alphabet	4	4	0	0
Incomplete	2	2	1	-
Under 10,000 words (around 100p)	4	5	19	27
Posthumous		2	1	-
Other languages		1 (French)	6 (French and German)	2 (German)
<b>CANDIDATES for ELTeC</b>	<b>1</b>	<b>24</b>	<b>94</b>	<b>152</b>

# How many of them actually available in Romanian libraries after

- **2 World Wars**
- **Communist expurgation of undesirable books published during the interbellum period or even during the 19<sup>th</sup>-century**
- **The 89 Revolution**

# Female authors: bettering the scores

From 37 novels authored by females:

-5 are written in French and German

-4 are around 100p (possibly under 10,000 words)

*If the 9 problematic items are taken out, in real terms we've got only 8% female-authored novels*

*Among the 28 novels that would fit as candidates:*

2 authored 3 novels (I.G. Lecca, S. Nadejde)

2 authored 2 novels (Smara, E.I. De Reus, Olteo)

6 authored 1 novel (E. Bacaloglu, M. Miller Verghi, C. Hodos, A. Xenopol, S. Cassvan, V. Ermali)

1 authored 3 novels but 2 of them are too short (E. Tailer is left with only 1)



# Sampling 9-11 authors with exactly 3 books

Who published at least 3 books between  
1840-1920?

1. D. Bolintineanu
2. R. Ionescu
3. N.D. Popescu
4. P. Macri
5. C. Sandu-Aldea
6. N. Rădulescu-Niger
7. I. Pop-Florantin
8. A. Theochari
9. M. Sadoveanu
10. Duiliu Zamfirescu
11. I. Slavici
12. R. Rossetti
13. V. Demetrius

14. G. Baronzi
15. Al. Pelimon
16. C. D. Aricescu
17. S. Nadejde
18. I.G. Lecca
19. A. I. Alexandrescu
20. C. Oeconomu
21. D.C. Moruzi

Which one would you chose?

**Debatable choices from the viewpoint of  
established Romanian literary historians  
and theorists**

# Open questions

## How can we get more novels in a specific group?

- Pioneer editing of problematic novels (e.g. novels in the transition alphabet can be recovered by training a HTR model on Transkribus)
- Open discussion about the status of translations or versions (into national languages) that have been authorized by the authors themselves

## What is the best way to get/ produce useful resources?

- customized, project-oriented libraries  
(<https://zenodo.org/login/?next=%2Fdeposit%3Fpage%3D1%26size%3D20>)
- larger digitization projects with a strong and well defined research focus: e.g. literary genres (novel, poetry, theatre), periods, themes, and other types of topical interests

- 12:00-13:00      Roxana Patras

**Experiene with building a Romanian Language collection**

**Focus on typefaces, special characteristics on the text marterial etc.**

**Hands-on session (transliteration)**

## *Introduction to Transkribus*

### **TRANSKRIBUS enables you to:**

- register in the platform
- download an expert tool specifically designed for your needs
- upload your own documents/images
- manage your own private collection (no one else has access to your documents!)
- segment the images into blocks, lines/baselines and words with the support of layout analysis tools
- link the text with the image which increases the value of your transcription significantly (actually you cannot transcribe text without linking!)
- transcribe text in any language and with any character set (load your own virtual keyboard)
- export your documents at every time in several formats such as TEI, RTF, PDF, XML.

This sounds interesting, but it starts to get really exciting if you consider that

- once you have properly transcribed e.g. 100 images you may inform us and we will train an HTR engine from the Computational Intelligence Technology Lab (CITlab) of the University of Rostock on your documents and
- you will be able to transcribe further pages of your documents with the support of automatically produced handwritten text.

# Installation

- Register
- Download Transkribus
- Try out some test documents with automatically produced full-text in the TranskribusCloud collection

Or

- Try to do it intuitively by starting from the documents available in the google drive

## Samples from 4 Romanian typesets

1. C.A. Aricescu, Misterele Casatoriei. Barbatul desilusionat, vol 3, 1866
2. G. Baronzi, Fontana zanelor, 1896
3. Ilie Ighel, Banditul Simion Licinski, 1890
4. Th. A. Myller, In lassy, 1871
5. G. Baronzi, Misterele Bucurestilor, vol 1, 1862

People that are not familiar with language and contents are better in transliteration:

What they see is what they retrieve

So

You won't learn Romanian in 1h!

But at least you'll train your eyes and patience for other situations when you need to treat a print as a handwritten text



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**If you have suggestions for ELTeC in general, for the national collections of ELTeC or anything else related to this project**

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<p> <emph>THANKS!</emph></p>
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