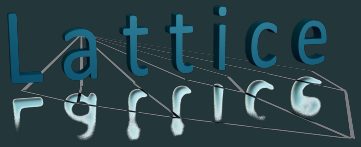

Operationalizing Canonicity

A Quantitative Study of French 19th and 20th Century Literature

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Lattice Lab : ENS-PSL-CNRS

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Introduction

"How is the selection of works and names destined for immortality made?". (Lanson, 1895)[1]

Canon formation in the sociocultural field :

- “Selective tradition” (Pollock, 1999)[2]
- The canon “embodies literary legitimacy itself”(Casanova, 2008)[3]
- Canonization as a sociological process (Bourdieu, 1992)[4]
- Is there some textual evidence to these research ?

Computational literary studies & the literary canon

- Distant reading. (Moretti, 2000)[5]
- Literary studies not really familiar with the main structuring lines of literary history ? (Underwood, 2019)[6]

Main research questions :

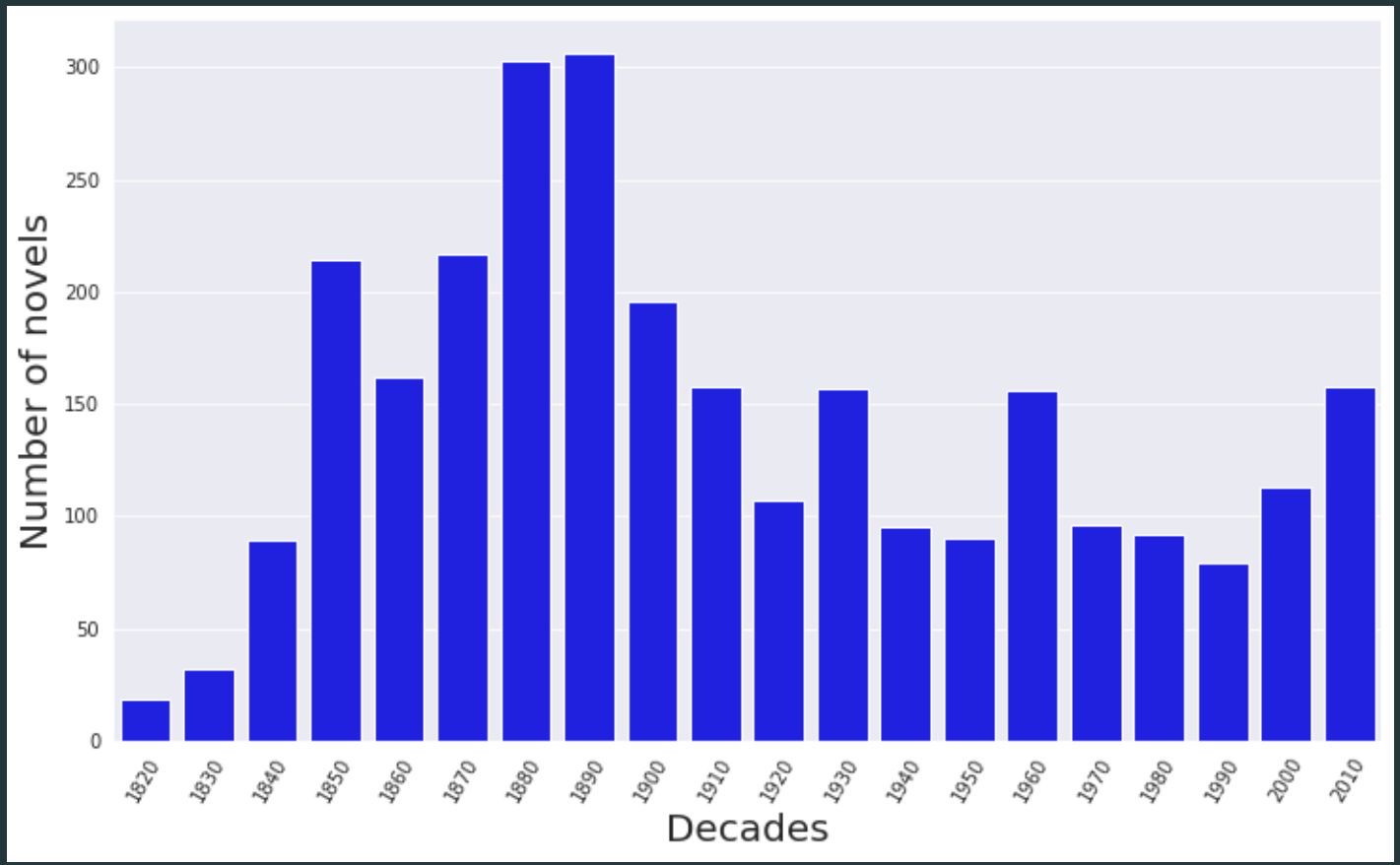
- Can we operationalize canonization process ?
- Can we link canonicity with some textual dynamics ?
- Textual properties as a causal phenomenon ? Or as a product of the canonization process ?

Corpus

Corpus

Corpus Chapitres (Leblond, 2022)[7] :

- 2960 novels
- 79.301 mean number of tokens per novel



Determining canonical factors

Determining canonical factors

The French literary canon through its contemporary reception

- The school canon

Determining canonical factors

The French literary canon through its contemporary reception

- The school canon
- The academic canon

Determining canonical factors

The French literary canon through its contemporary reception

- The school canon
- The academic canon
- The canon of the agrégation

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- The school canon
- The academic canon
- The canon of the agrégation
- The canon of publishers

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- The canon of criticism

Determining canonical factors

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- The canon of the agrégation
- The canon of publishers
- The canon of criticism
- The political canon

Our French Literary Canon

Twofold granularity

- novel scale - 306 items (10% of the corpus)
- author scale - 1173 items (40%)
- School institution as a canon maker ?

Cosine Similarity Heatmap

- Strong similarity between the school based factors
- literary award list clearly different

Methods

Textual features

Bag-of-words

- 1000 Most Frequent n-grams
- Focus on function words -> unconscious way of writing (stylometry) -> unconscious markers of the canon selection ?

Statistical Modeling

Binary classification

- SVM - Scikit-Learn (Pedregosa, 2011) [8]
- GroupKFold - Cross Validation pipeline dealing with idiolectal bias
- Baselines
- Metrics (Balanced accuracy, f1 score, ...)

Results

Balanced accuracy : 0.708 Baseline : 0.496

	precision	recall	f1-score	support
canon	0.728	0.668	0.697	306
non_canon	0.691	0.748	0.719	304
full dataset				610

Table 1: Results of the evaluation of the model, novel scale

Canonicity at the novel scale

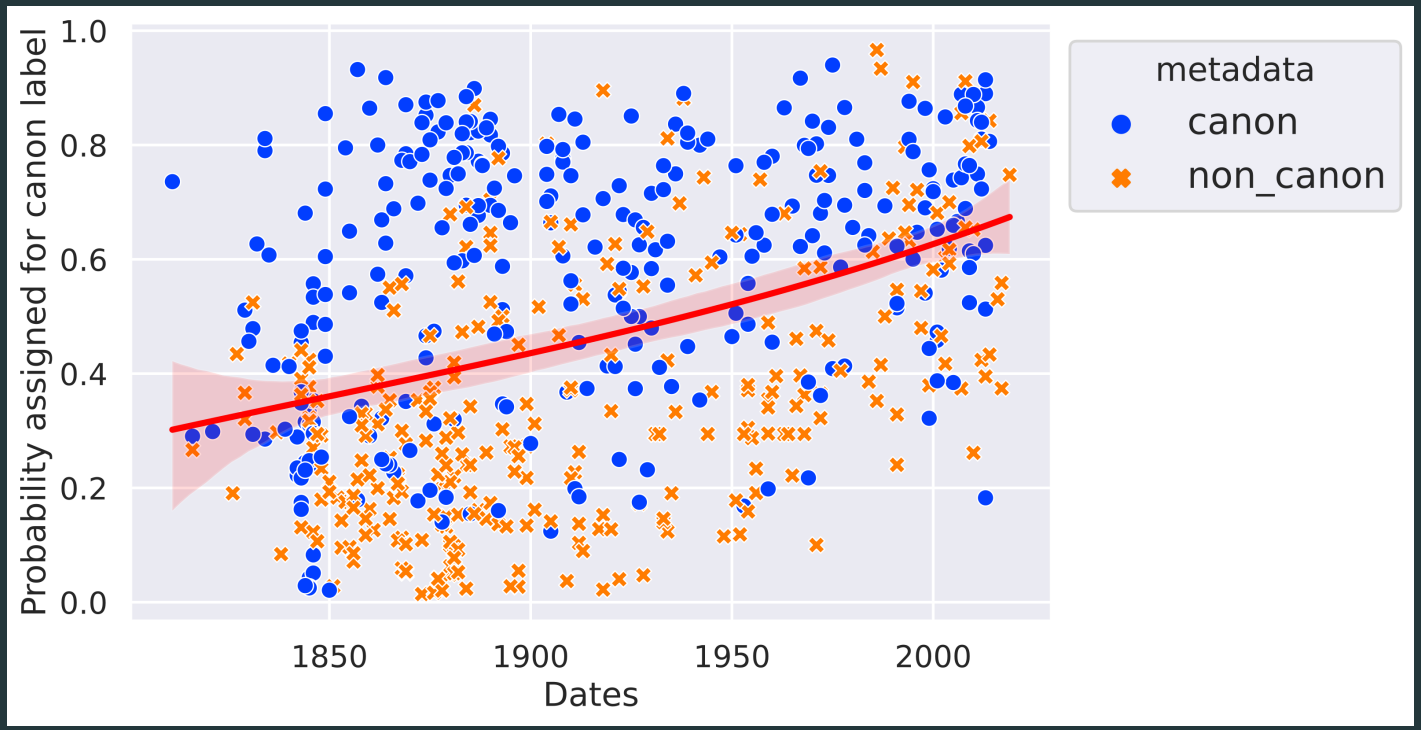


Figure 1: Predicted probability to be canonical, novel scale

Canonicity at the novel scale

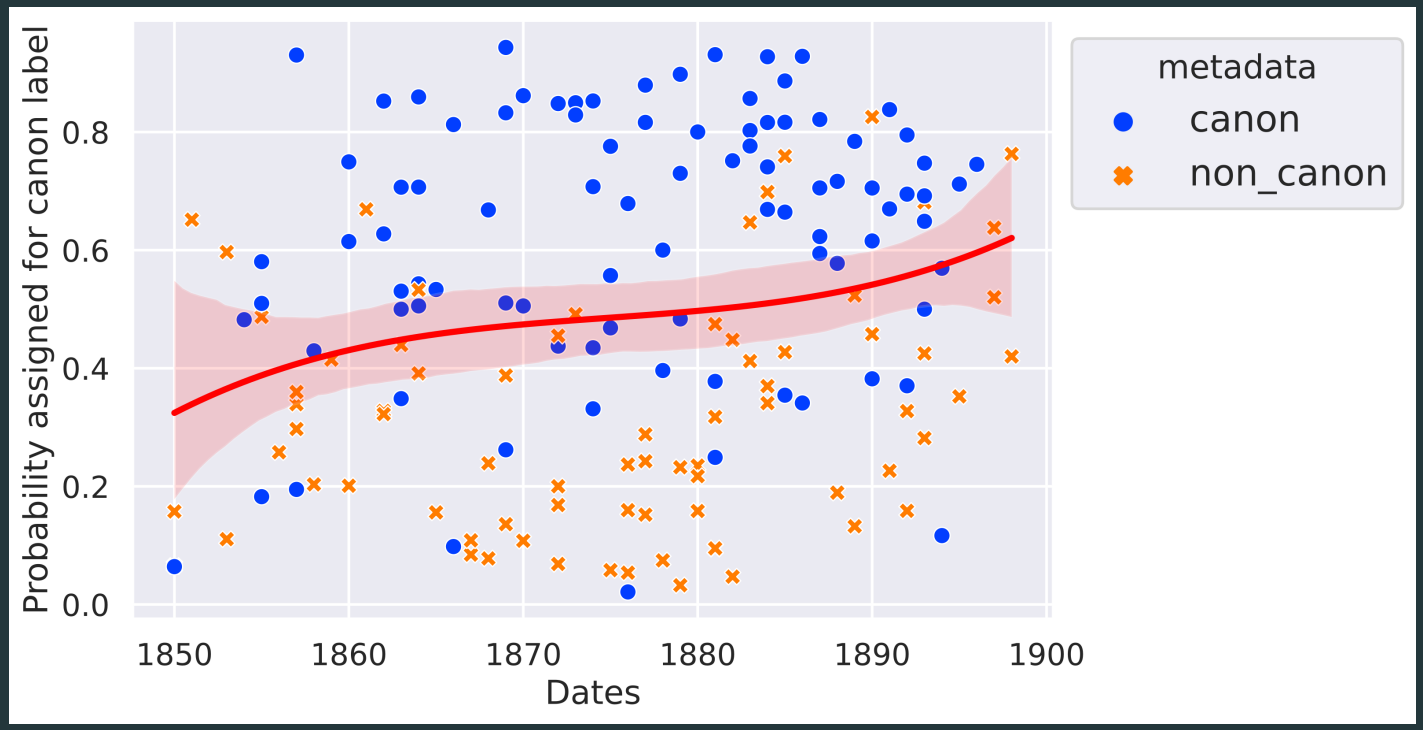


Figure 2: Predicted probability to be canonical, 1850-1900, novel scale

Balanced accuracy : 0.741 Baseline : 0.516

	precision	recall	f1-score	support
canon	0.721	0.645	0.681	1173
non_canon	0.782	0.836	0.808	1787
full dataset				2960

Table 2: Results of the evaluation of the model, author scale

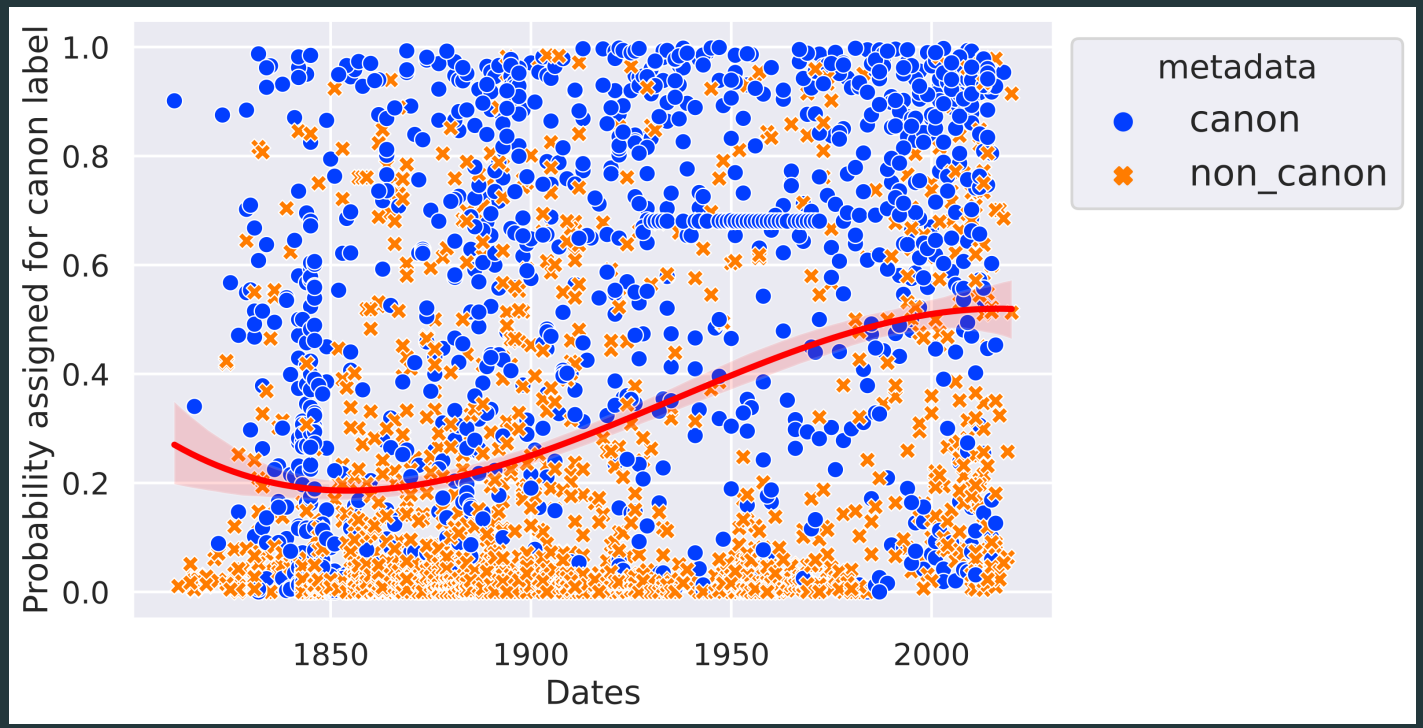


Figure 3: Predicted probability to be canonical, author scale

Canonicity at the author scale

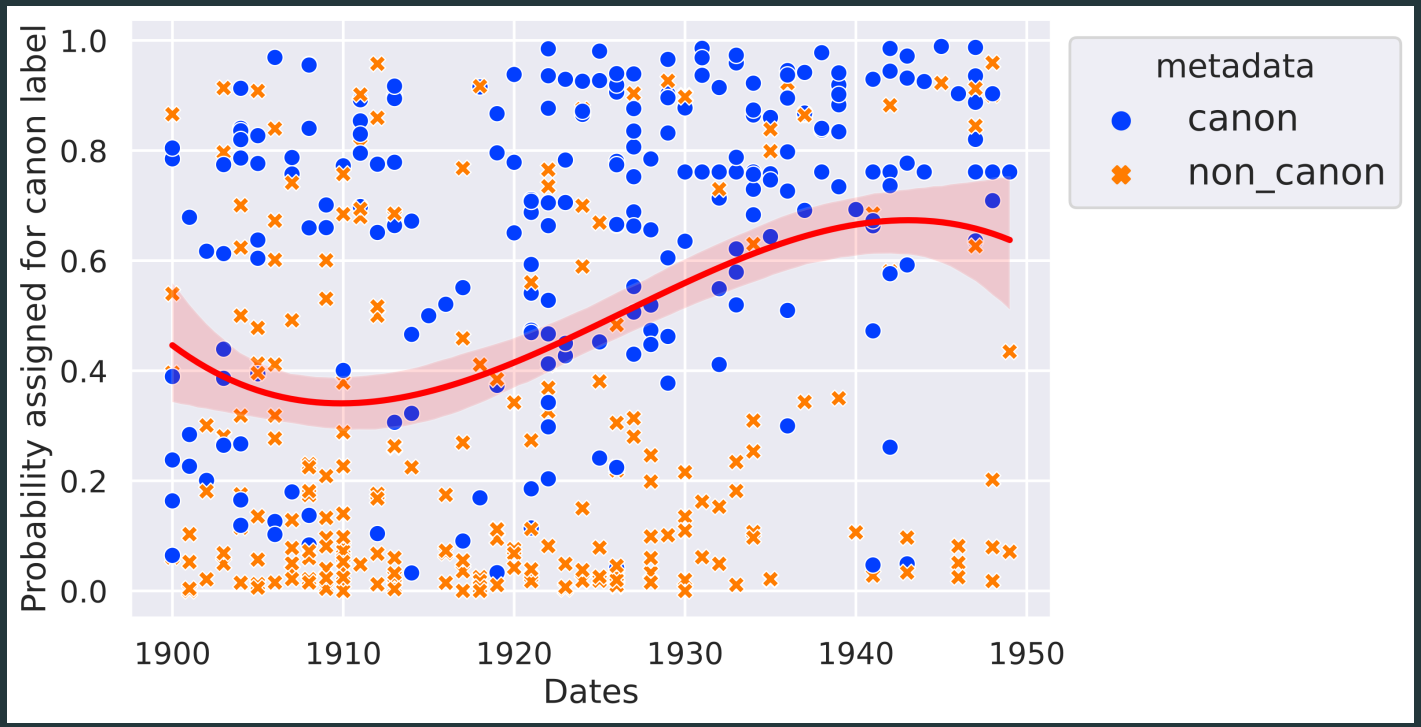
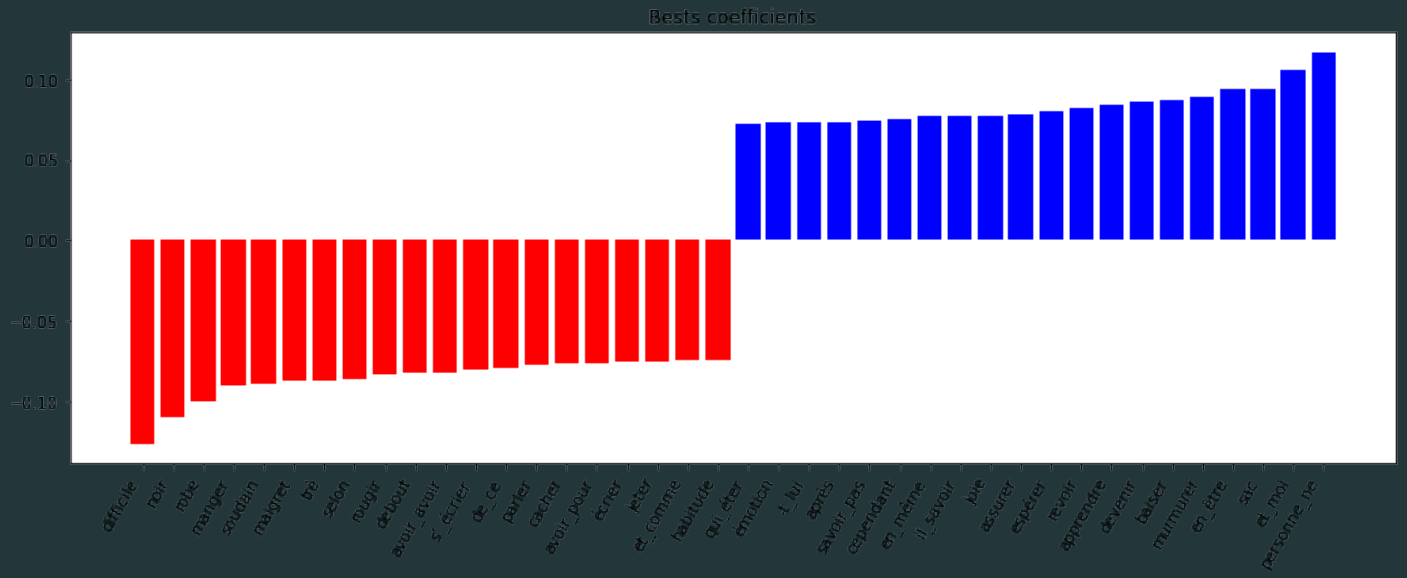


Figure 4: Predicted probability to be canonical, author scale

Model's discriminant coefficient



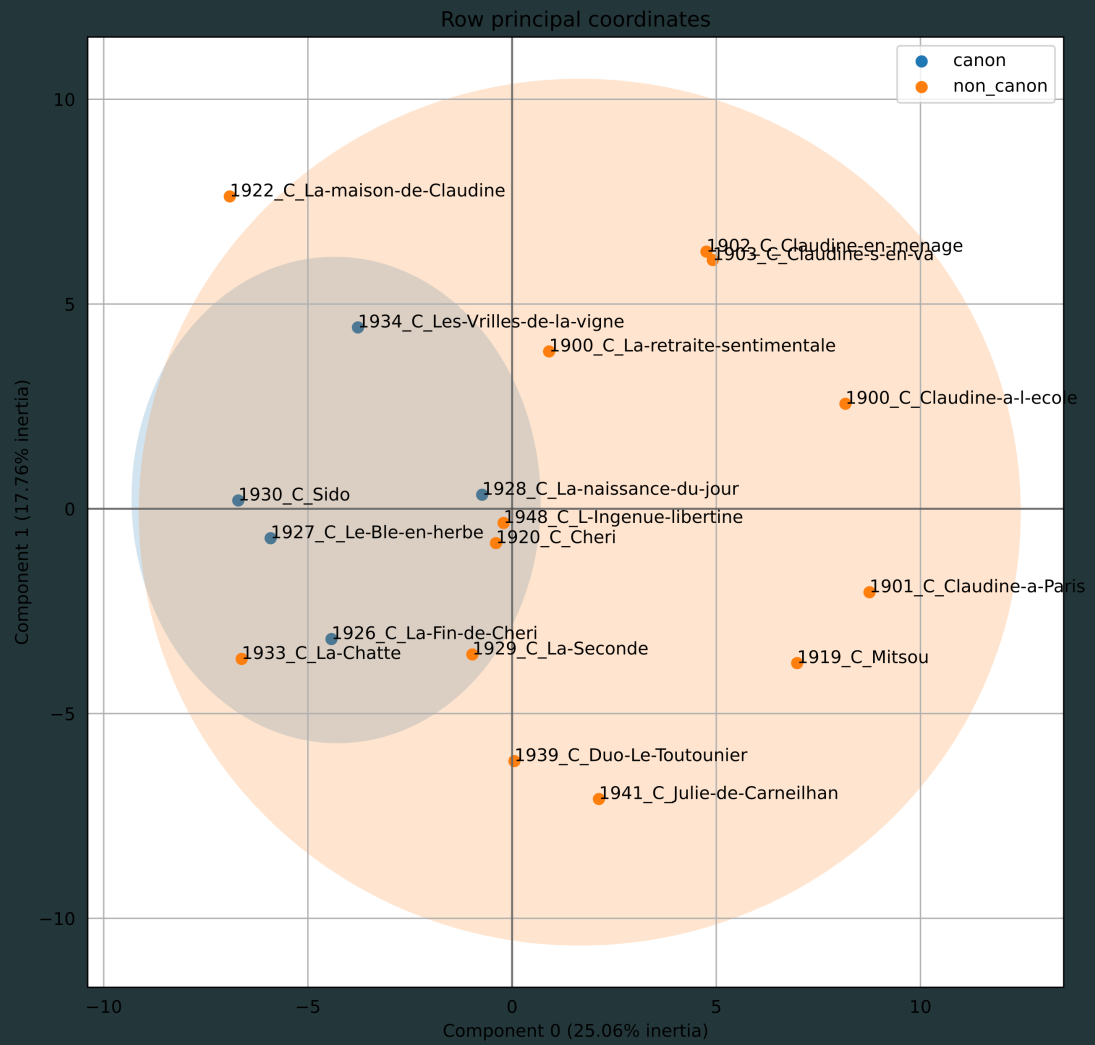
Model coefficients insights

- Complexity of the sentence (auxiliaries, conjunctions, substantive nouns)
- A more colloquial register for non-canonized novels

Canonical selectivity in an author’s production

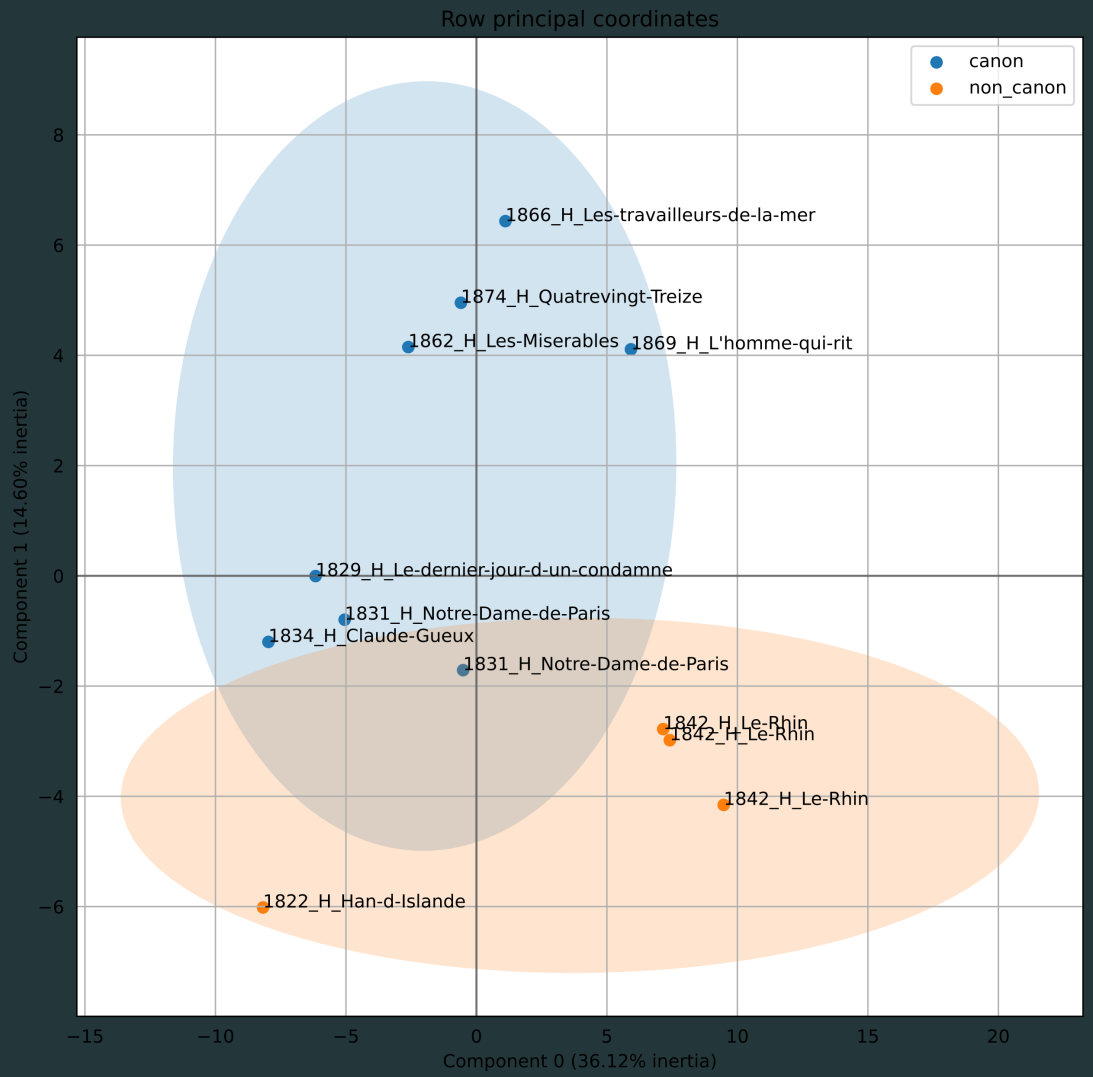
PCA Colette

- The *Claudines* series
- Not only an idiolec-tal/chronolectal drift

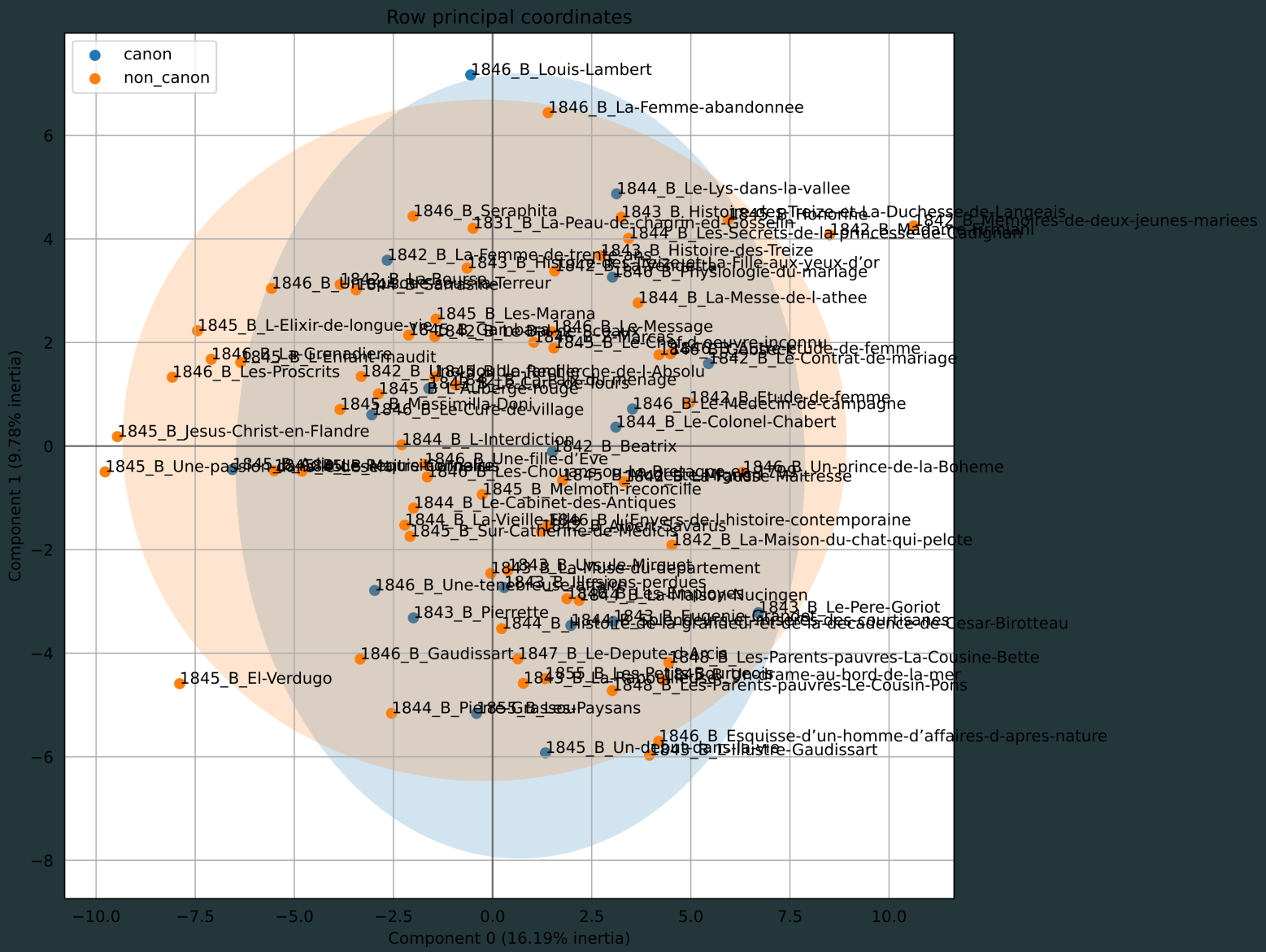


PCA Victor Hugo

- The three volumes of *Le Rhin* - A travel guide
- *Han d'Islande* The young Hugo



PCA Balzac


Row principal coordinates
canon
non_canon
1846_B_Louis-Lambert
1846_B_La-Femme-abandonnee
1844_B_Le-Lys-dans-la-vallee
1846_B_Seraphita
1831_B_La-Peau-de-chagrin-ed-Gosselin
1844_B_Les-Secrets-de-la-princesse-de-Cadignan
1842_B_La-Femme-de-trente-ans
1843_B_Histoire-des-Treize
1842_B_La-Fille-aux-yeux-d'or
1846_B_Physiologie-du-mariage
1844_B_La-Messe-de-l-athee
1845_B_Les-Marana
1845_B_L-Elixir-de-longue-vie
1846_B_Le-Message
1842_B_Le-Contrat-de-mariage
1846_B_Les-Proscrits
1842_B_Etude-de-femme
1845_B_Jesus-Christ-en-Flandre
1844_B_Le-Colonel-Chabert
1844_B_L-Interdiction
1842_B_Beatrix
1846_B_Une-fille-d'Eve
1846_B_Un-prince-de-la-Boheme
1845_B_Melmoth-reconcilie
1844_B_Le-Cabinet-des-Antiques
1845_B_Sur-Catherine-de-Medicis
1842_B_La-Maison-du-chat-qui-pelote
1843_B_Pierrette
1846_B_Gaudissart
1847_B_Le-Depute-d-Arcis
1845_B_El-Verdugo
1844_B_Pierre-Grassou
1846_B_Esquisse-d'un-homme-d'affaires-d-apres-nature
Component 0 (16.19% inertia)
Component 1 (9.78% inertia)

Conclusion

Futur Work

- Retrieve metadata diachronically: Recovering the social context of reception over time, as reception is filtered
- We could also fragment our view of the canon by agents in the literary field (editions, textbooks, academic prestige, literary journals, ...)
- Word / Paragraph embeddings ?
- Recovering and analyzing “canonical” excerpts in close reading

Conclusion

- We provide an operable definition of the notion of literary canon
- A statistical model can predict canonicity with 70% to 74% accuracy
- The model produces relatively valid criteria for specific time span, but fails for two centuries of literary production
- This detected norm support the sociocultural research on the Canonization process and add a formal aspect to it.
- We assume that this norm is the result of biased latent selection mechanisms that are producing literary value and literary “immortality”.
- Literature is also determined by its own institutions and conventions, by its own mechanisms of production and reproduction.

Thank you for your attention !

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https://crazyjeannot.github.io/