



Elena González-Blanco García UNED - Coverwallet elena@coverwallet.com







# ¿Cómo analizamos la poesía?





Medicine, law, business, engineering, these are noble pursuits. Poetry, romance, love, this is why we stay alive for.

\*Dead Poets Society (1989)\*









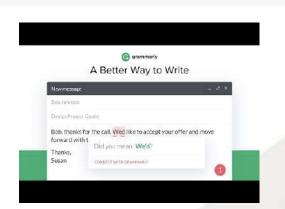










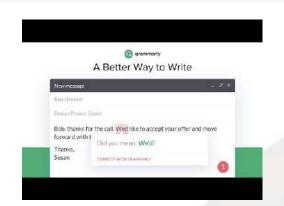
























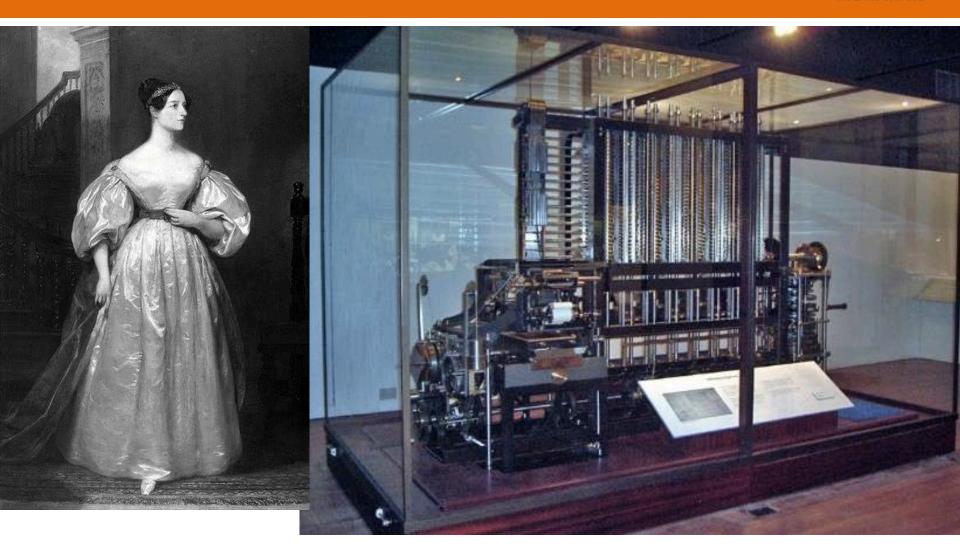




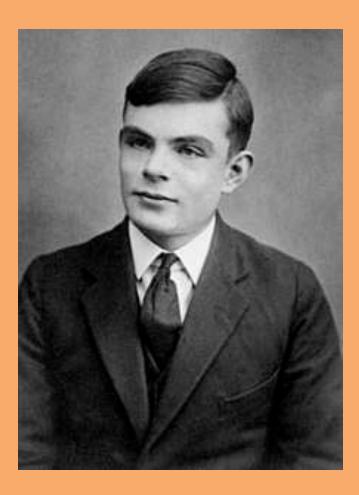
### ADA LOVELACE, 1815-1842



Poetry Standardization and Linked Open Data



### Alan Turing, 1912-54 "Turing Test"



Vol. LIX. No. 236.]

October, 1950

#### MIND

A QUARTERLY REVIEW

OF

#### PSYCHOLOGY AND PHILOSOPHY

### I.—COMPUTING MACHINERY AND INTELLIGENCE

By A. M. TURING

#### 1. The Imitation Game.

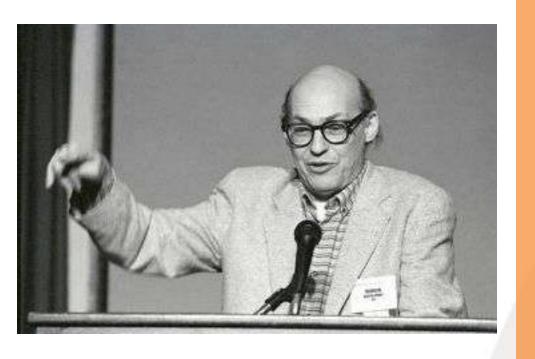
I PROPOSE to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, 'Can machines think?' is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game'. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A'. The interrogator is allowed to put questions to A and B

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's

### **Marvin Minsky**, 1927-2016



- Cofundador del Laboratorio de IA de
   MIT
- •El "cerebro de la IA" convencido de que las máquinas podían pensar como los hombres
- Investigación fundacional para la creación de redes neuronales artificiales.
- Asesor de *Odisea en el Espacio*, 2001,
   de Stanley Kubrick

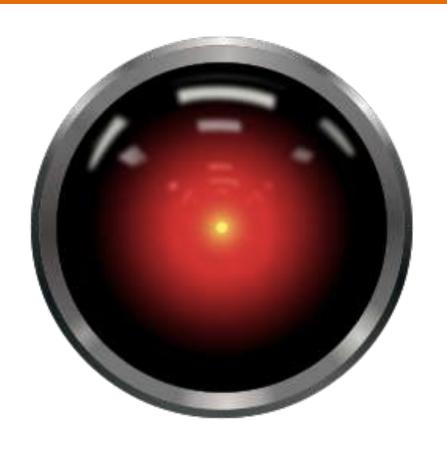






2001 A Space Odyssey, 1968





2001 A Space Odyssey, 1968



### LOS HITOS MÁS RELEVANTES



1980-99
Estadística y modelos entrenados

Algoritmos probabilísticos Entrenamiento con datos Inclusión de gramáticas complejas y generación del lenguaje



1950-60

# Orígenes de la IA

Primeros algoritmos Sistemas expertos Fundamentos del NLP



2010hoy Redes neuronales, ML, DL

Redes neuronales y Deep Learning Aprendizaje no supervisado NLP combinado con DL -Neural Machine Translation

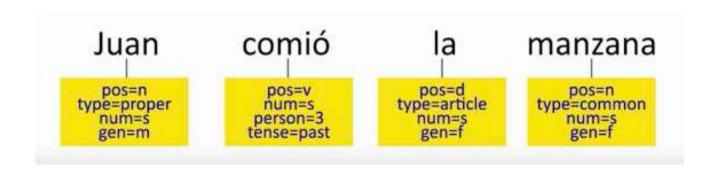


•Juancomiounamanzana

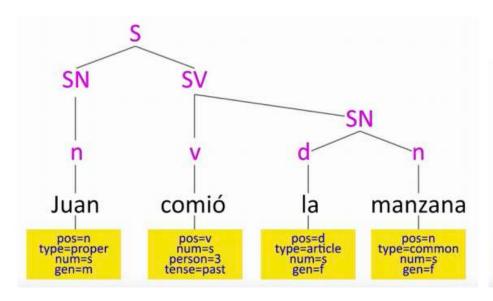


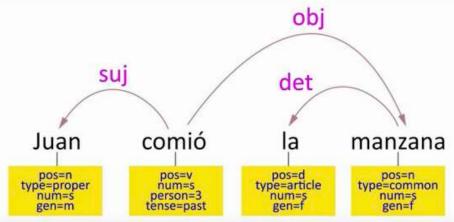
•Juan comio una manzana



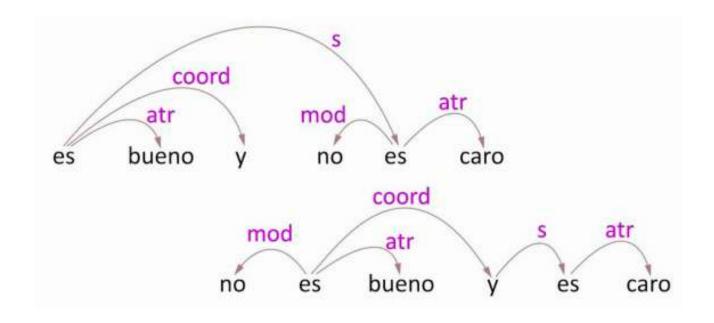




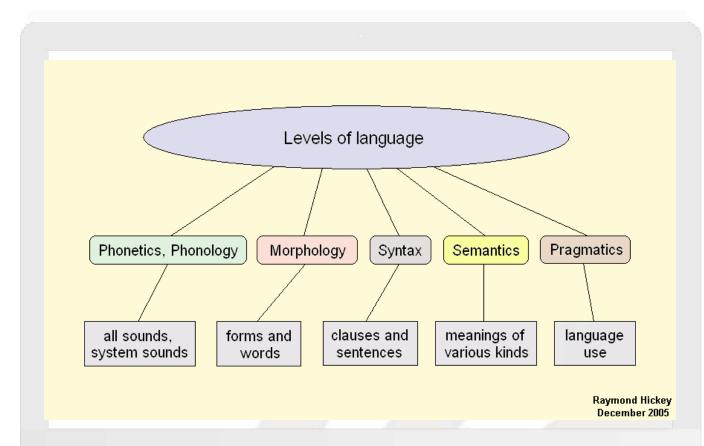




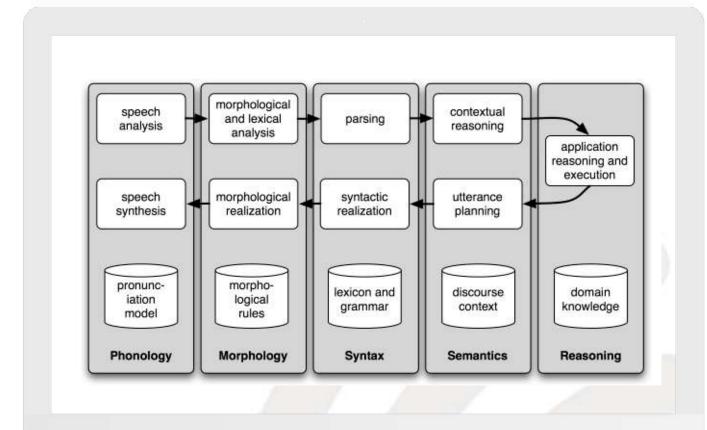




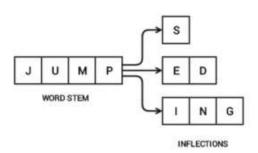
¿CÓMO ENSEÑAMOS TODO ESTO A UN ORDENADOR?



¿CÓMO ENSEÑAMOS TODO ESTO A UN ORDENADOR?

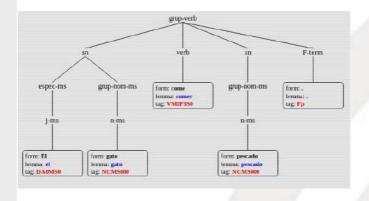


### ¿CÓMO ENSEÑAMOS TODO ESTO A UN ORDENADOR?



# Part-Of-Speech Tagger - Análisis morfológico Yo bajo con el hombre bajo a tocar el bajo bajo la por parte con el hombre bajo a tocar el bajo bajo el percensión de la porte bajo a tocar el bajo bajo el percensión vivil percensión de la percensi

Treebank - Anotación sintáctica



Wordnet - Análisis semántico

Necesito un gato para cambiar la rueda del coche.

escalera

Necesito necesitar VMIP1S0 01188725-v un uno DIOMS0

#### gato gato NCMS000 03588951-n

para para SPS00 cambiar cambiar VMN0000 00126264-v la el DA0FS0 rueda rueda NCFS000 04574999-n de de SPS00

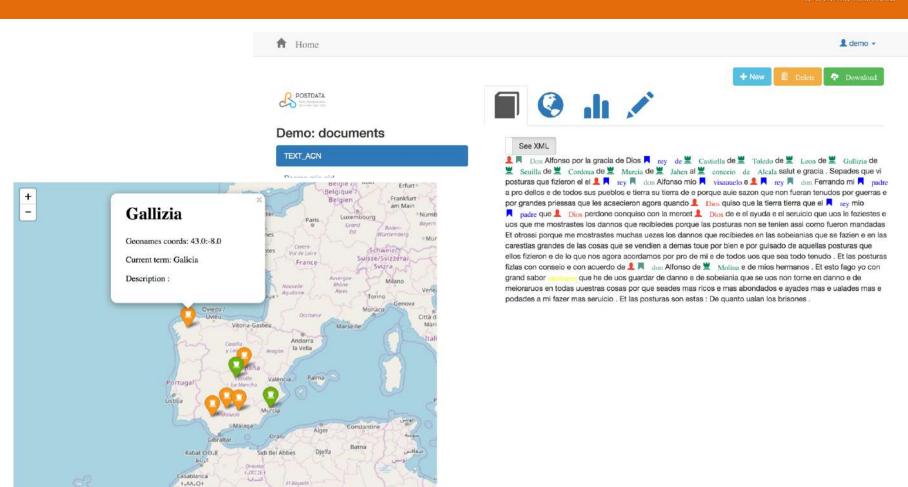
el el DAOMSO coche coche NCMSO00 02959942-n

. . Fp 1 -

# NAME-ENTITY RECOGNITION - EXTRACCIÓN DE ENTIDADES



Poetry Standardization. and Linked Open Data



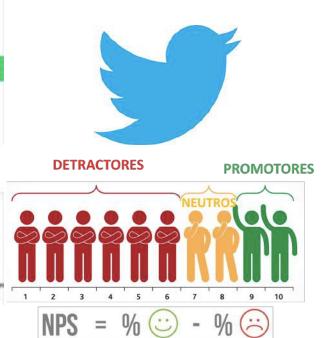
### ANÁLISIS DE SENTIMIENTO





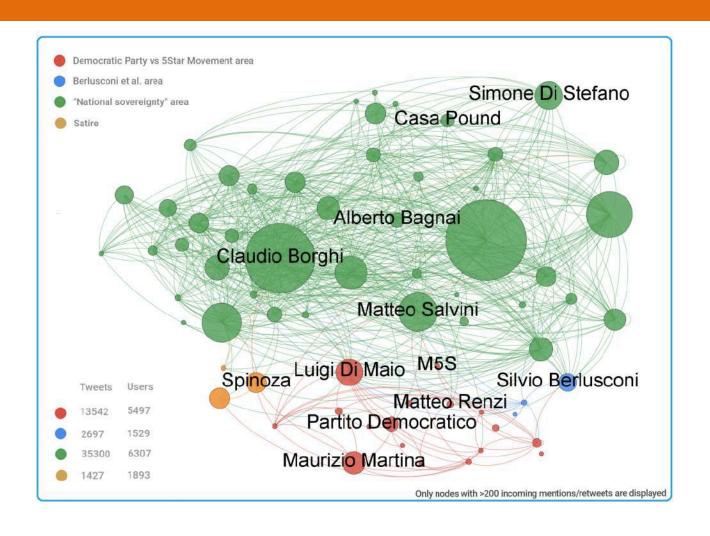
Seller rating: 4.4 / 5 - Based on 10,544 reviews

4 stars 5 stars What people are saying "Terrible customer service." customer service "Over all delivery speed was good." shipping "Great price, fast shipping, great product." price "Fairly good selection of parts." selection "Horrible return/exchange policy." return policy "Really great transaction." ordering process "Quick shipping, great shipping communication" communication



### ELECCIONES ITALIANAS 2018 - REPUTACIÓN DIGITAL

Poetry Standardization and Linked Open Data





#### VISUALIZING



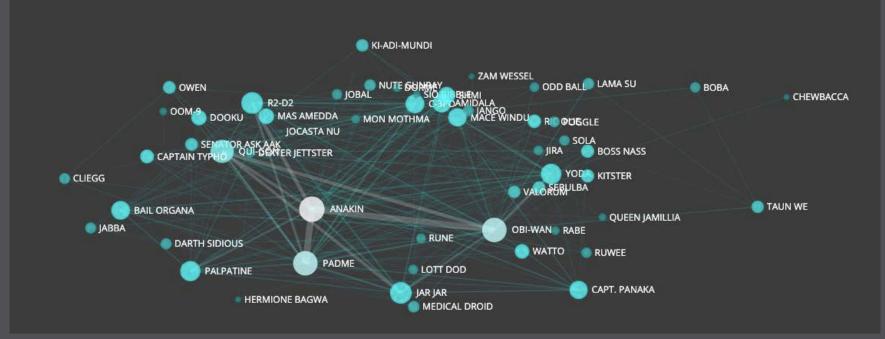
#### **MOVIE SCRIPTS**

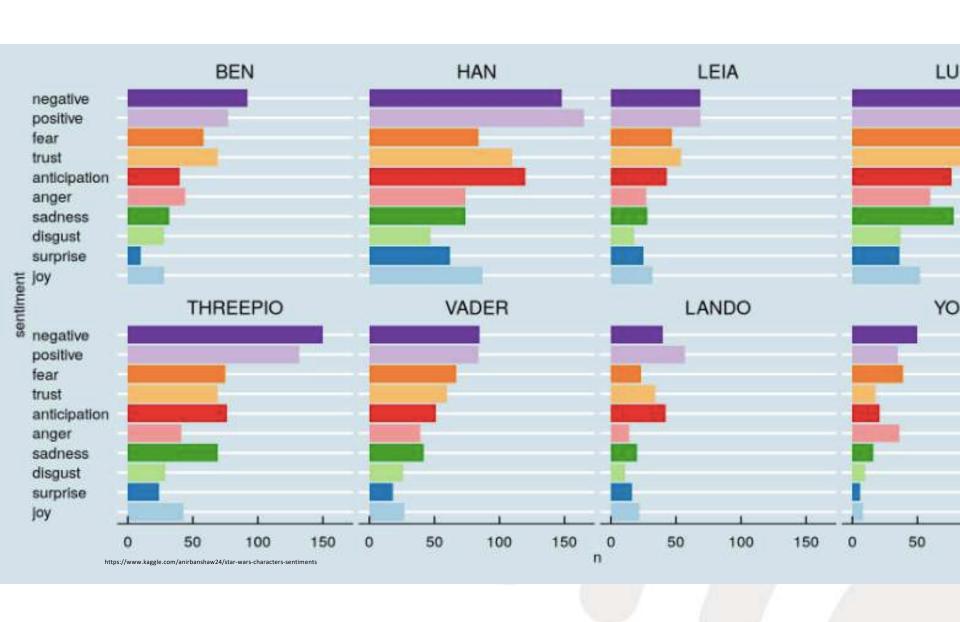
A long time ago, in a galaxy far, far away data analysts were talking about the upcoming new Star Wars movie. One of them has never seen any eposide before, so they decided to make the movie more accessible to this poor fellow.

http://labs.precognox.com/star-wars-visualization/

### VISUALIZING







### The Internet Movie Script Database (IMSDb)

**IMSDb** 

The web's largest movie script resource!







(2014)

(2017)

Thor Ragnarok

More >

.............

Genre



Action Adventure Animation Comedy Crime Drama Fantasy Film-Noir Family Horror Musical Mystery Sci-Fi Short Romance Thriller War Western

#### Sponsor







Last







**Newest releases** 

HUP



(2009)





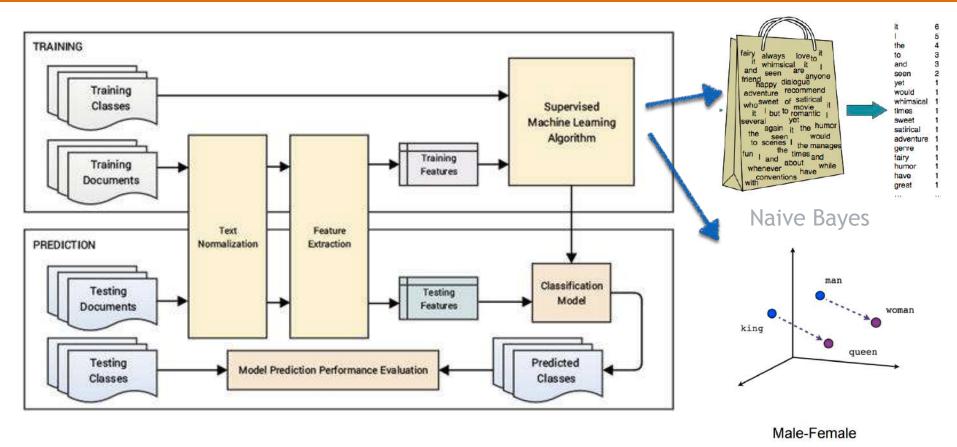
Guardians of the Galaxy Vol 2 Written by James Gunn



https://www.imsdb.com/

### **CLASIFICADORES DE TEXTOS**





Word2Vec

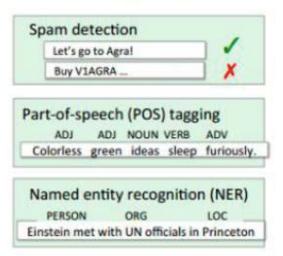
# ¿Qué podemos hacer con tecnologías del lenguaje? OSTDATA

Poetry Standardization and Linked Open Date

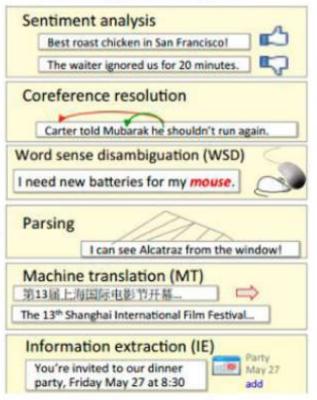
### ¿Qué podemos hacer con tecnologías del lenguaje?

Poetry Standardization and Linked Open Data

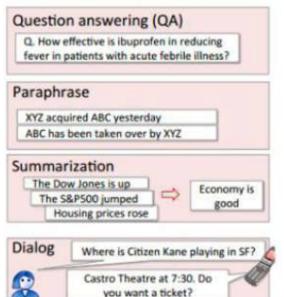




#### making good progress



#### still really hard



# ¿Cómo se concibe un proyecto de poesía desde las Humanidades Digitales?



#### Traditional Research

#### Digital Humanities

Counting syllables with fingers



Automatic syllable counter

Comparing 2-3 poems at the same time



Comparing thousands of poems in parallel

Looking for similar evidences by reading all papers and books



Finding multiple evidences through one search engine

Individual research



Collaborative, interdisciplinary research

### ¿Cómo definimos un poema?



Estuans intrinsecus in amaritudine factus de materia folio sum similis.

ira vehementi loquor mee menti. levis elementi de quo ludunt venti.

Cum sit enim proprium supra petram ponere stultus ego comparor sub eodem aere

viro sapienti, sedem fondamenti, fluvio labenti, numquam permanenti.

Feror ego veluti ut per vias aeris non me tenent vincula,

8

12

sine nauta navis, vaga fertur avis; non me tenet clavis,

quero mei similes

et adiungor pravis.

Carmina Burana, 191



Author Title Incipit Manuscript Post quem Ante quem Language Topics Edition

Work

Isometrism Isostrophism Metrical scheme Rhyme scheme Rhyme Musical notation Number of stanzas Online edition Number of lines Poetic form

### Barreras filológicas



Estuans intrinsecus ira vehementi

in amaritudine loquor mee menti.

factus de materia levis elementi

4 folio sum similis, de quo ludunt venti.

Cum sit enim proprium viro sapienti,

supra petram ponere sedem fondamenti,

stultus ego comparor fluvio labenti,

8 sub eodem aere numquam permanenti.

Feror ego veluti sine nauta navis,

ut per vias aeris vaga fertur avis;

non me tenent vincula, non me tenet clavis,

12 quero mei similes et adiungor pravis.

Carmina Burana, 191

Alexandrines

Goliardic

12A12A12A12A (Romance)

4x(7pp+7p) (Classic Latin)





Un poco de historia

### Primeros repertorios poéticos



- Gaston Raynaud, *Bibliographie des chansonniers français des XIIIe et XIVe siècles*, 1884.
- Gotthold Naetebus, *Die nicht lyrischen Strophenformen des Altfranzösischen*, 1891.
- Pillet & Carstens, *Bibliographie des Troubadours*, 1933



DIE
ICHT-LYRISCHEN STROPBENFORMI
369
ALTFRANZÖSISCHEN.
EIN VERZEICHNIS
PERAMMENGRAPHICAT CNO RELACTIONT
***
GOTTHOLD NARTHBUR.

VIII. aaaa. 12 S.

1. La vie et l'istoire du mauvais riche hor

Devant l'uis au riche home le ladre s'arresta Por la grant fain qu'il ot forment se dementa.

Hs. Paris, Nat. bibl. f. fr. 957 Bl. 118.

Mit den ersten 5 Zeilen angeführt 1848 von P. Paris, Mss. fr. VII, 339. — Über ein in paarweis reimenden Achtsilbnern verfastes Livre de l'exemple du riche homme et du ladre vgl. van Hamel, Rencl. S. CXCIX und Rom. XVIII, 642.

Hs.: Ar Concordance avec les répertoires:

Långfors : 90

Raynaud - Spanke : -Mölk - Wolfzettel : -

Nellow Pages

**4°** ∠ Auckland 2004

Incipit:

Variantes de l'incipit:

Devant l'uys au riche homme le ladre trespassa Devant l'uys au riche homme le ladre trespassa, Devant l'uys au riche homme le ladre s'aresta,

Source:

Titre:

Auteur:

(texte anonyme)

Paris, BNF fr. 957

Cambridge, Magdalene College, Coll. S. Pepys 1938

Cambridge, Magdalene College, Coll. S. Pepys 1938

Auteurs secondaires:

Versification:

texte entièrement en vers

poème strophique poème isostrophique

Nombre des strophes:

<u>28</u> <u>Cambridge, Magdalene College, Coll. S. Pepys 1938</u> Paris, BNF fr. 957

Paris, BNF Ir. 95

Structure strophique: 12aaaa

Irrégularités métriques (numéro de la strophe – structure strophique): <u>8 - 12aa</u>

Paris, BNF fr. 957

Cambridge, Magdalene College, Coll. S. Pepys 1938

<u> 10 - 12aaa</u>

Paris, BNF fr. 957

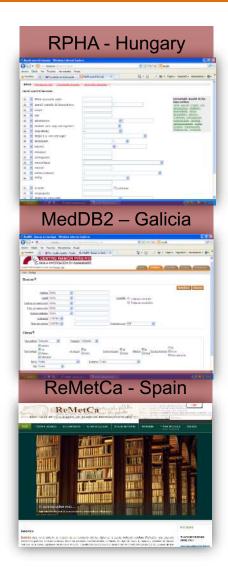
Cambridge, Magdalene College, Coll. S. Pepys 1938 16 - 12aaa

Paris, BNF fr. 957

Cambridge, Magdalene College, Coll. S. Pepvs 1938

### El puzzle de repertorios dig









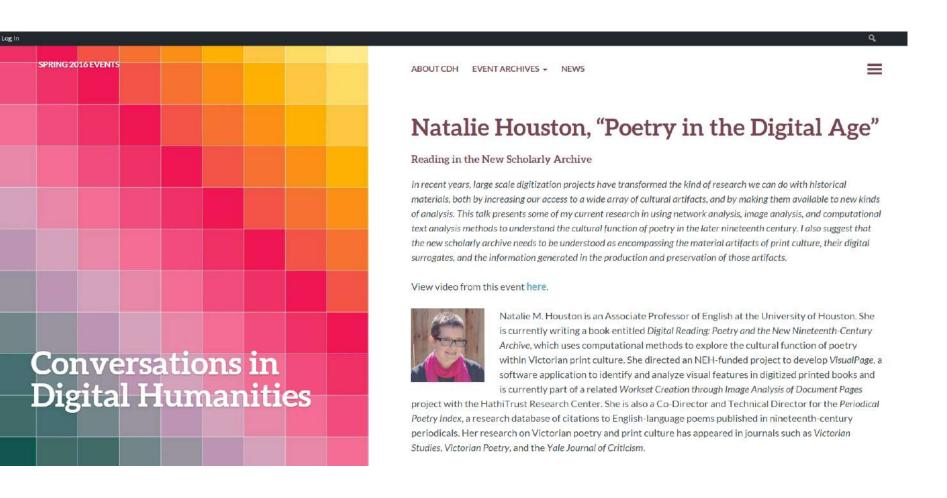
### Barreras tecnológicas





### ¿Cómo organizar los datos?





http://blogs.comell.edu/dhconversations/natalie-

# Visión de POSTDATA: facilitar la investigación de los humanistas mediante la transformación digital



#### Investigación tradicional

#### Humanidades Digitales

Contar sílabas con los dedos



Contar sílabas automáticamente

Comparar 2-3 poemas al mismo tiempo



Comparar miles de poemas a la vez

Buscar testimonios en libros y artículos



Buscar múltiples evidencias a través de un motor de búsqueda

Investigación individual



Investigación colaborativa

## Las barreras filológicas se deben a distintas formas de conceptualizar



Estuans intrinsecus ira vehementi

in amaritudine loquor mee menti.

factus de materia levis elementi

4 folio sum similis, de quo ludunt venti.

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supra petram ponere sedem fondamenti,

stultus ego comparor fluvio labenti,

8 sub eodem aere numquam permanenti.

Feror ego veluti sine nauta navis,

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12 quero mei similes et adiungor pravis.

Carmina Burana, 191

Alejandrino

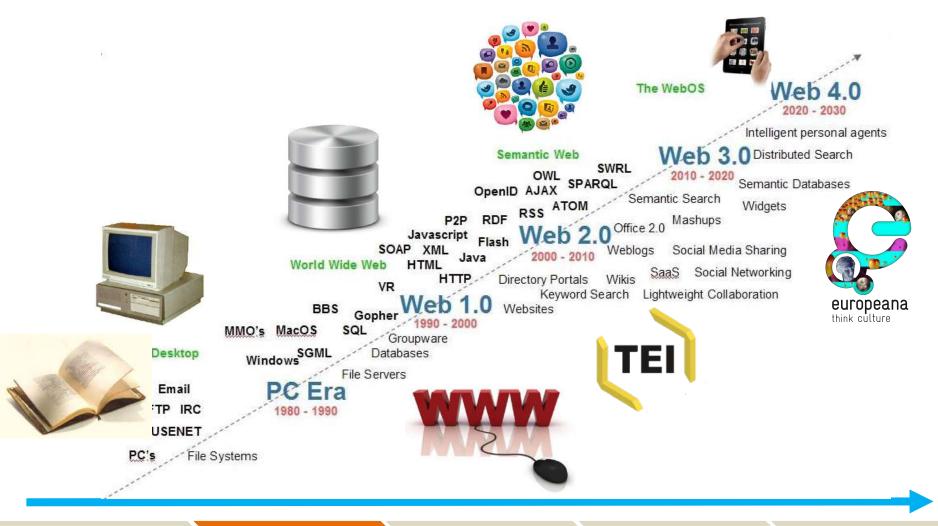
Goliárdico

12A12A12A12A (Tradición romance)

4x(7pp+7p)
(Latín Clásico)

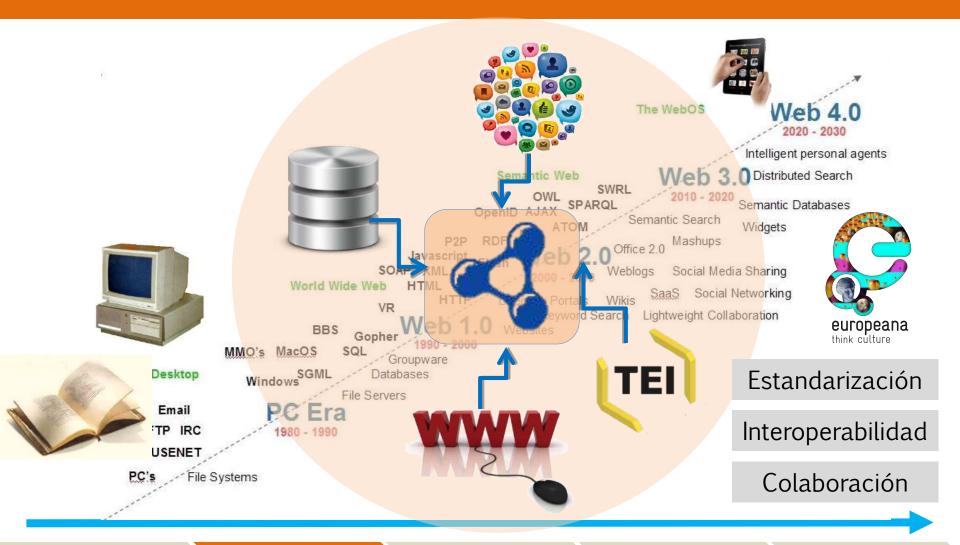
## Las barreras tecnológicas por falta de estandarización e interoperabilidad



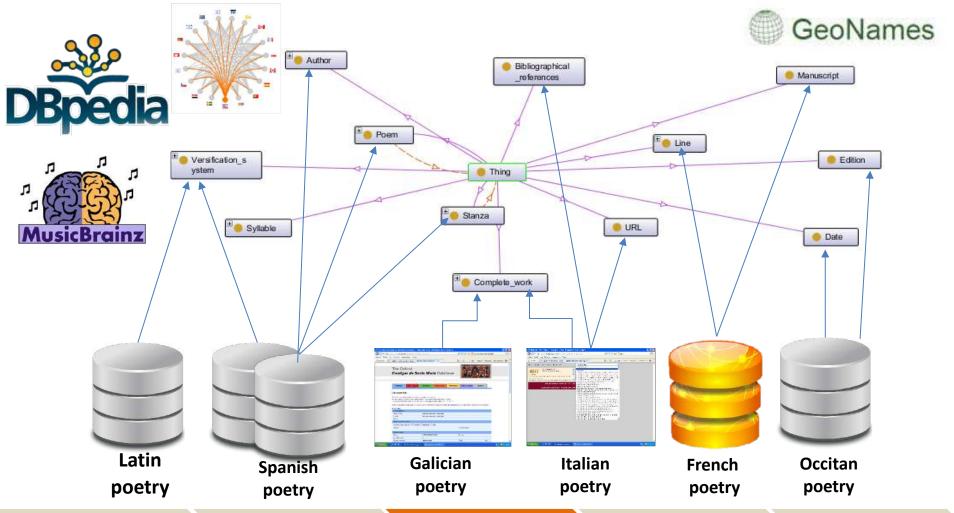


## POSTDATA es la clave para enlazar tecnologías haciéndolas interoperables





## POSTDATA: un modelo abstracto con elementos POSTDATA comunes entre los diferentes sistemas poéticos Postry Standardization and I nacid Open Dava







End date: 31 April 2021

WP 7 Architecture and Integration and Validation

#### WP 6

Design and visualization - user interface

#### **WP 4**

WP8

Scientific

coordination

Develop of VRE Scholarly Edition

#### WP 5

Poetry Lab development and apps

WP 3 Collect and study the controlled vocabularies

#### WP 2

Semantic Web and Ontology

#### WP 1

State of the art: Repertoires and poetic vocabularies

Start date: 1 May 2016

WP9

Project management and dissemination



### Los tres ejes de POSTDATA

Infraestructura semántica

Enlazados (LOD)



Datos Abiertos

Entorno virtual de investigación



Edición digital académica

Poetry Lab



Procesamiento del lenguaje natural NLP

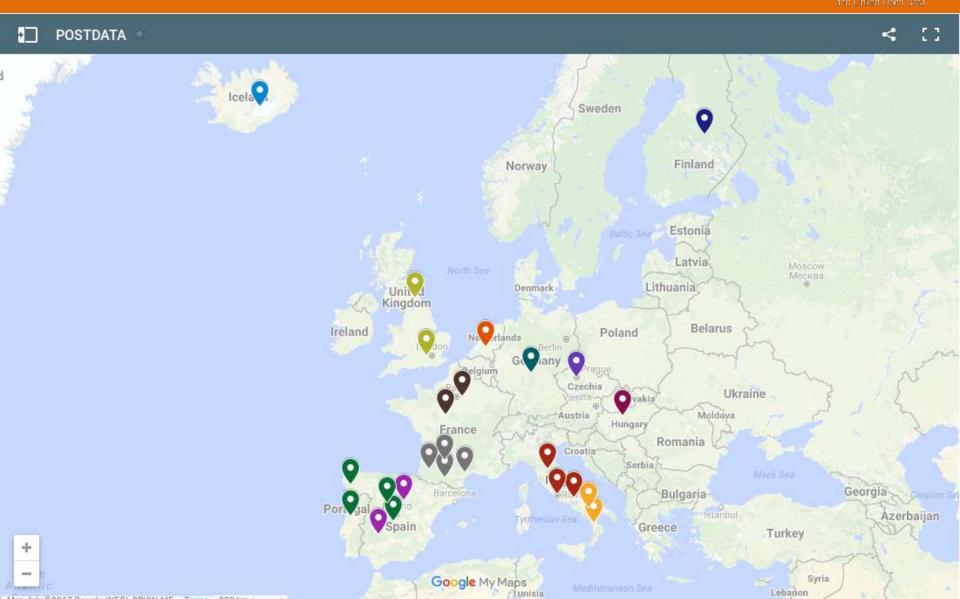
### Dónde estamos... las bases de datos



- 28 bases de datos contactadas
- 26 respuestas positivas de colaboración con POSTDATA
- 11 databases se han utilizado para definir el Domain Model V0.1
- Seguimos abiertos a encontrar nuevos repertorios...
- http://postdata.linhd.es/partners/



### The databases - partners





elena@coverwallet.com http://postdata.linhd.es



Poetry Standardization and Linked Open Data

### How do we organize data?

#### amandafrench.net

Amanda L. French, Ph.D. - scholarly communication and digital humanities research, teaching, grant writing, and project management,

About Projects Writing

Teaching Presentations Service

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#### The 7 Best Links to Digital Poetry Projects from MLA

Print this post

by Amanda French January 14, 2014 - 5:04 pm

Before I give you the listicle, I'm going to make you skim through some summary, I'm mean like that, (Back off, man, I'm an academic.)

I go to the Modern Language Association annual convention these days for the digital panels — and to hobnob with the smart people on them, of course, many of whom I know already, but many of whom I don't know, even "just" online. If I had to name just one thing I got from MLA this year, it's that digital humanities is no longer the next big thing — it's beginning to be just an ordinary thing. In other words, I felt that there was a lot less defensiveness about digital methods in the study of literature this year.

Granted, most of the papers dealing with digital methods are still located on panels themed around digital methods, as I think you can tell by Mark Sample's helpful annual listing, but there was some promising intermingling between digital and traditional methods papers on panels such as "Diversifying the Victorian Verse Archives." (Note: I was on my way to that panel when a minor emergency came up that took an hour or so to resolve; I was very sorry indeed to have to miss it.) All three of those papers basically teach us a bit more about Victorian songs and their relation to Victorian poetry than we used to know, but only two of them explicitly mention the creation or sophisticated use of digital archives as a major component of the research. And Brian Croxall and I both had the same idea in forming our panels: to concentrate on the results rather than the methods. Both his Association for Computers and the Humanities panel "Beyond the Digital: Pattern Recognition and Interpretation" and the panel I put together titled "Things My Computer Tayont Me About Poems" tried (with fair success) to do less description of and argument for digital approaches while giving more concrete examples of the new insights into language and literature these approaches have given.

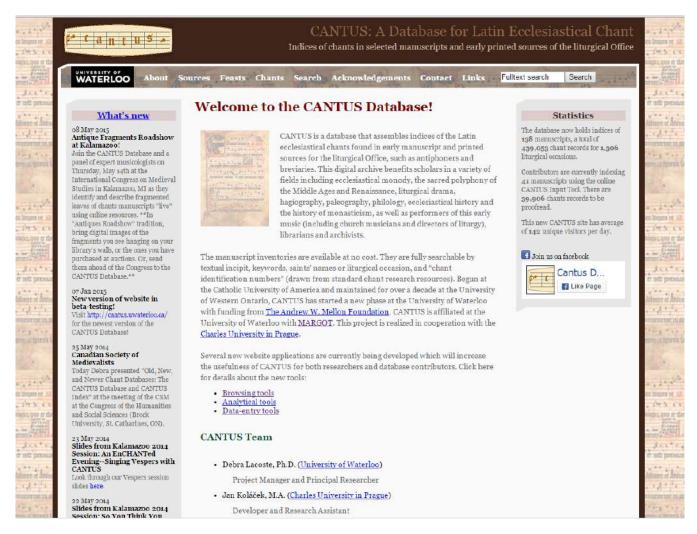
But I have to admit that the single best paper I heard that took what we might call this "more interpretation, less demonstration" approach was Mark Algee-Hewitt's, of the Stanford Literary Lab. In a panel titled "Making Sense of Big Data," Algee-Hewitt seemed all insight, though granted what he had insight into was a particular well-known literary theory of Mikhail Bakhtin's rather than a literary text or corpus. In The Dialogic Imagination Bakhtin famously argues that novels get their energy from "heteroglossia," or what we might call "polyvocality." Novels have so many voices, so many registers of diction: all the characters and their dialogue, the narrator in various moods and modes. Lyric poems, by supposed contrast, generally have one voice; that of the poet. Algee-Hewitt recounted an absorbing tale of getting results from his analysis of the comprehensive Eighteenth-Century Collections Online database (ECCO) that first supported and then challenged Bakhtin's theory: ultimately, at least if you consider these texts at the semantic level of individual words (what individual words mean, that is), Bakhtin seems to be wrong — poems are actually far more polyvocal, less "self-similar" in Algee-Hewitt's term, than novels and non-fiction. Theorists versus data analysts! I love it. Can't wait to hear more. I'm sure the debate over that particular issue of the heteroglossia of novels and poetry, if it branches out, will indeed circle back to method — one questioner raised the issue of whether semantic word analysis really matches Bakhtin's idea of "heteroglossia" — but at least it won't be an argument about whether such data analysis is legitimate: only how to do it as well as possible. As a side note from that paper, I was impressed by the very fact that the Stanford Literary Lab has developed a simple and effective algorithm to tell novels apart from nonfiction apart from poetry and poetic drama from the full-text data: I think Algee-Hewitt said it had about a 95% accuracy rate, I can see that being very useful for someone else's project. Clearly I need to keep a closer eye on that Stanford Literary Lab.

Here's the listide for you, then - The 7 Best Links to Digital Poetry Projects from MLA:

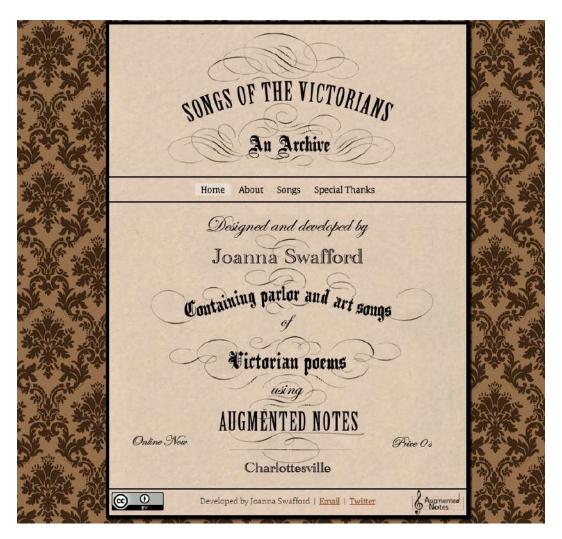
1. Princeton Prosody Archive, Meredith Martin et al. (database not live vet)

### A typology of poetry projects

- 1. Repositories of poetic corpora and collections
  - Images
  - Texts
  - Music
- 2. Digital editions + XML markup
- Quantitative analysis: Statystical analysis, NLP and data mining
- 4. Experimental projects: Computational creativity
  - Other disciplines: aesthetics, psychology
- 5. Visualization experiments
- 6. Social + user-oriented projects
- 7. Semantic web-based projects







Search ]

#### American Poetry of the Great War

A Digital Archive

Home About the Archive Volumes ▼ Authors ▼ Blog Bibliography

#### Welcome

The American Poetry of the Great War Digital Archive is intended as a central respository of poetry written by Americans during and immediately following World War I.

We hope the archive will be a resource for those interested in exploring the war, along with Americans' responses to it, through literature.

Embarked for France. Western Newspaper Union, 1917

#### News

- New Additions to the Archive
- The Original Vision

More

### 2. Digital editions using XML-TEI



### 2. Digital editions using XML-TEI



#### <oo>→<met> Meter, rhythm, and rhyme

Maintained by: David J. Birnbaum (djbpitt@gmail.com) @@@@ Last modified: 2015-05-30T19:17:57+0000

#### The computationally assisted analysis of formal features in Russian poetry

#### About this site

This project, developed by Elise Thorsen and David J. Birnbaum, is dedicated to the design and deployment of computational tools to aid the analysis of formal features in Russian poetry. These tools involve the detection of stress in Russian texts presented in native orthography and the subsequent derivation of meter and rhyme patterns from stress and orthographic information. The output of those processes is an XML document that can provide the basis for visualizations of formal features (see, for example, the verse tables of the sample poems below). Beyond these reports, the informational mark-up of poetic texts is intended to enable the characterization of formal features in large digitized poetic corpora to support research in sub-fields including quantitative metrics, genre studies, and diadronic studies of stylistics and influence.

#### Research reports

- · Enabling the automated identification and analysis of meter and rhyme in Russian verse
  - Proposal, DH2015: Global digital humanities (Sydney)
  - Slides from presentation at the LAUDATIO mini-workshop, Berlin 2013-05-07
- Perspectives on computer programming for the humanities. By Lawrence D. Adams and David J. Birmbaum; originally published in Text technology 7, 1 (1997), 1–17, and updated for the present online version.
- · Strong and weak metrical positions

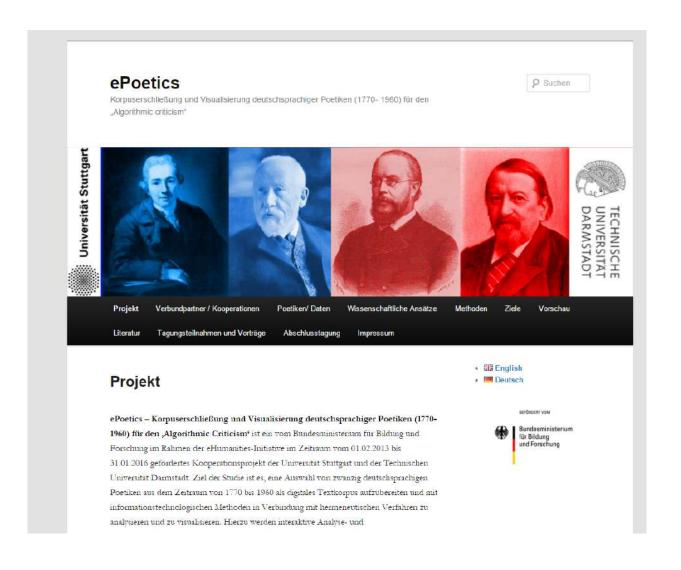
#### Sample poems

Under development; interim results

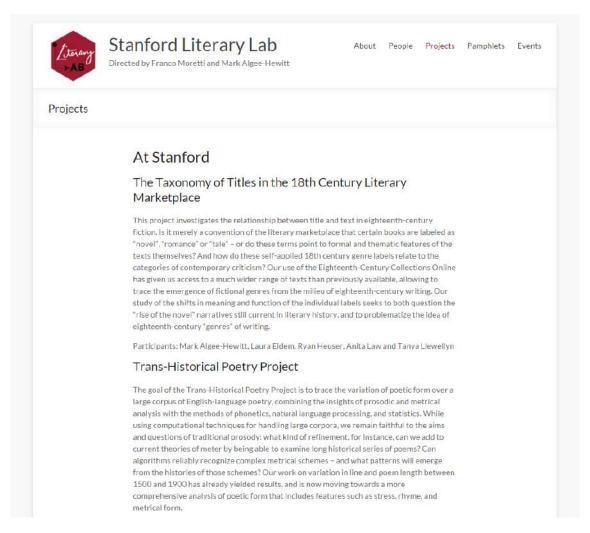
- Ахматова, Анна Андреевна: Вечером, Лилии, Любовь, Наследница, Он любил
- Гиппиус, Зинаида Николаевна: Нелюбовь
- Пастернак, Борис Леонидович: Его речь
- Пушкин, Александр Сергеевич: Бесы, Евгений Онегин, К \*\*\* (Ты богоматерь, нет сомненья), К \*\*\* (Я помню чудное мгновенье), Кавказский пленник, Пророк

#### Miscellaneous

- Bibliography
- · Internet resources
- A computational approach to identifying the place of stress in Russian poetry [watch this space]
- · Early mockup output



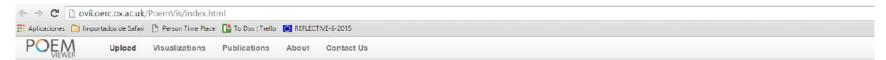


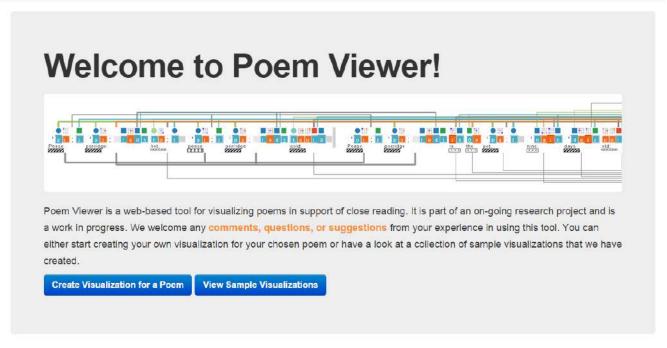


### 4. Computational creativity



### 5. Visualization-oriented projects





News

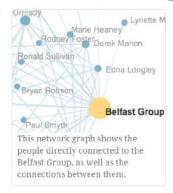
Poem Viewer featured in the latest issue of JISC's Inform.

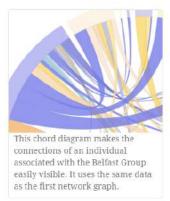
### 5. Visualization-oriented projects

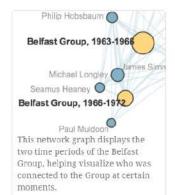
Belfast Group Poetry | Networks

overview | group sheets | people | networks & maps | essays | credits | Q

#### Networks & Maps







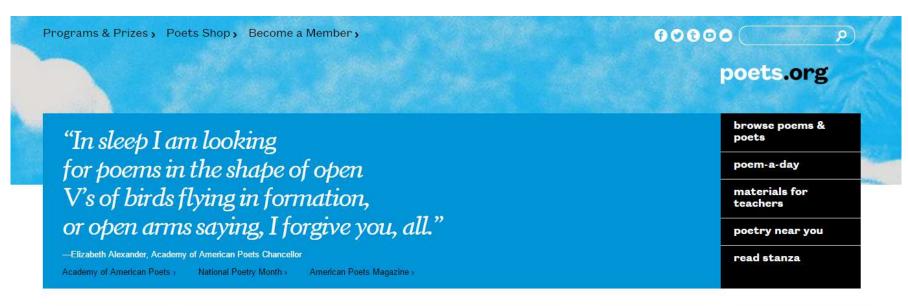


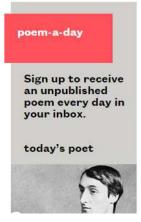
After the Belfast Group stopped meeting in 1972, many participants downplayed its importance to the development of their writing. Regardless of its ultimate impact, the writing workshop nevertheless connected many authors in Northern Ireland. The pages linked above visualize these networks of relationships, as well as the writers' connections to specific places.

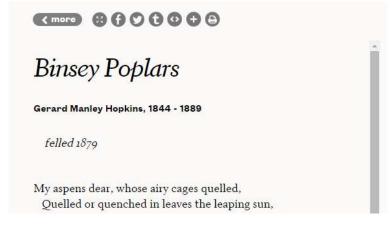
The data used to create these visualizations come from the digitized drafts of Group sheets as well as the poets' collected materials in Emory University's Manuscript, Archives, and Rare Book Library (MARBL). The Namedropper software developed for Belfast Group Poetry | Networks helped the team tag people and places mentioned in the archival descriptions or poetry with unique identifiers. The computer can now "understand" that Seamus Heaney wrote to Michael Longley and Derek Mahon, as well as writing frequently about County Tyrone. As a result, this "understanding" can be quantified and represented graphically. (A more technical description of the RDF-generation process is available.) The visualizations were created to represent different views on the relationships among Belfast Group participants, including how connected they were to the writing workshop itself. You can also see the network of connections among individual writers and their peers on individual biography pages.

This approach allows the investigation of the Belfast literary circle in a way that would be very difficult through regular archival research, especially since the project draws on catalogue information about letters that are currently sealed to researchers. Nevertheless, the visualizations cannot provide a complete picture. Not all of the poetry Group sheets have been digitized nor do MARBL's collections hold every letter sent by or to a poet. let alone materials from every author in the Belfast Group. That said, even incomplete visualizations provide a new way to investigate the formation of a literary community.

### 6. Social & user-oriented projects









### 6. Social & user-oriented projects

