



# The World Literature Knowledge Graph

marcoantonio.stranisci@unito.it



**di.unito.it**

DIPARTIMENTO DI INFORMATICA



## Motivation

Few resources for the study of **implicit discrimination** are actually available

- ➔ Under-representation of non-Western people and minorities
- ➔ Racial and gender biases
- ➔ Correlation with other phenomena (eg: morality, coping)

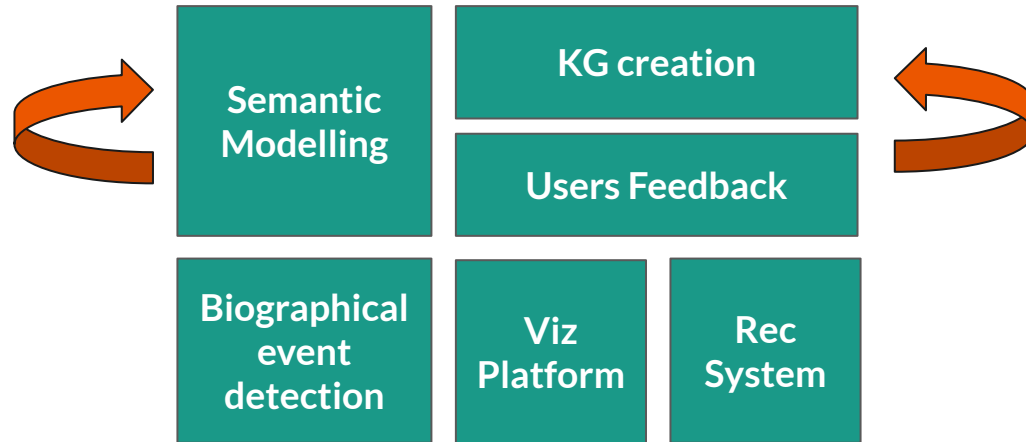


## Objectives

1. **Exploring** the underrepresentation of non-Western writers on Wikidata
2. **Mitigating** such underrepresentation through a mapping with other archives
3. **Analyzing** racial and gender biases in Wikipedia biographies



## The project at a glance





# The WL-KG Semantic Model



## Mapping with existing resources

- DOLCE
- FRBR
- PROV-O
- Wikidata

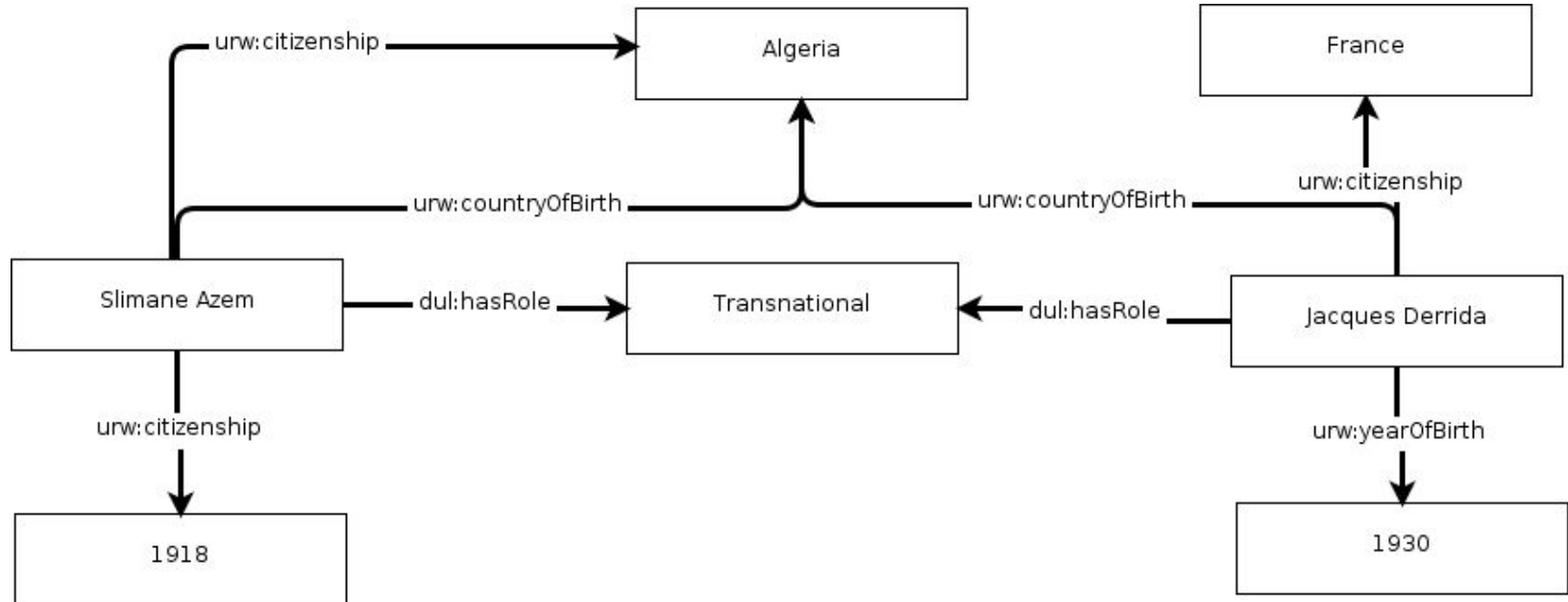


# Modelling writers

A Transnational Writer is a person who:

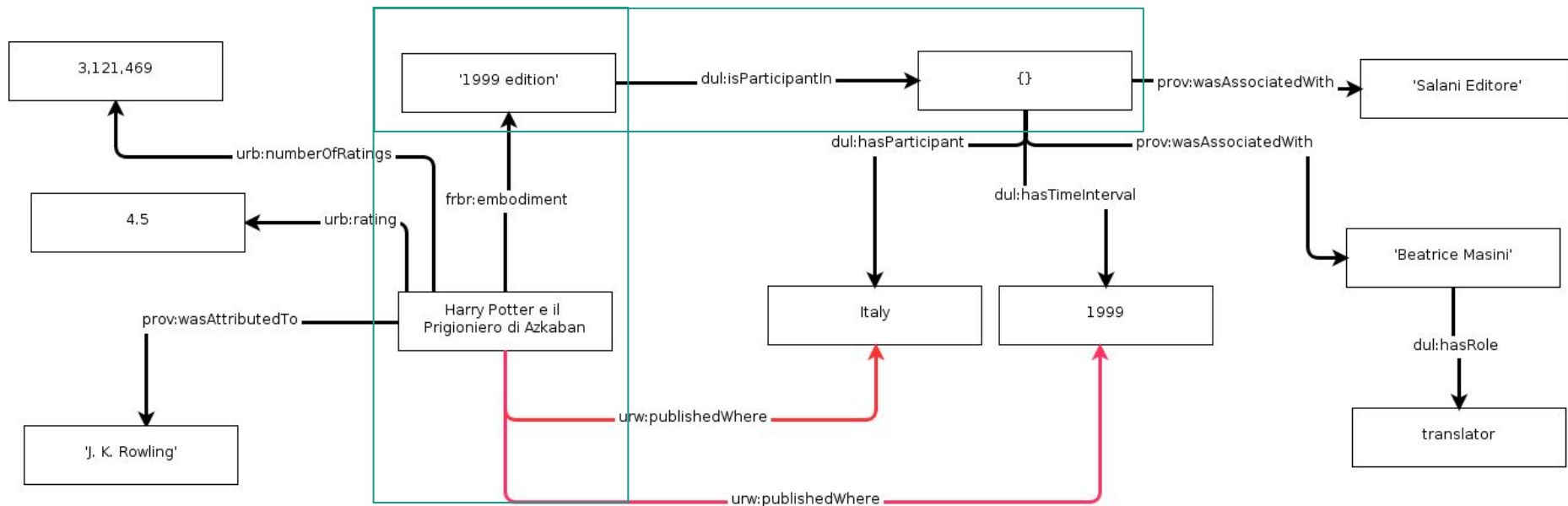
1. was born in a Latin American country which has been a former colony and has a high or lower Human Development Index (from 1808 on)
2. was born in an African or Asian country which has been a former colony and has a high or lower Human Development Index (from 1917 on)
3. A person belonging to an ethnic minority

# Modelling writers





# Modelling works

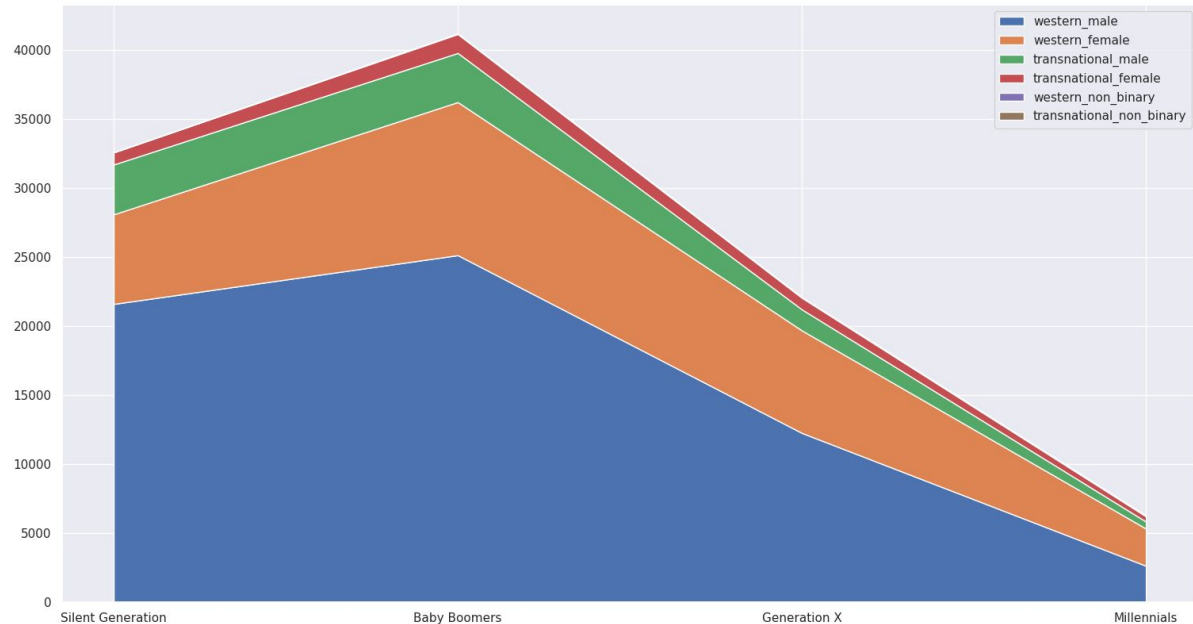




# Knowledge Graph Creation

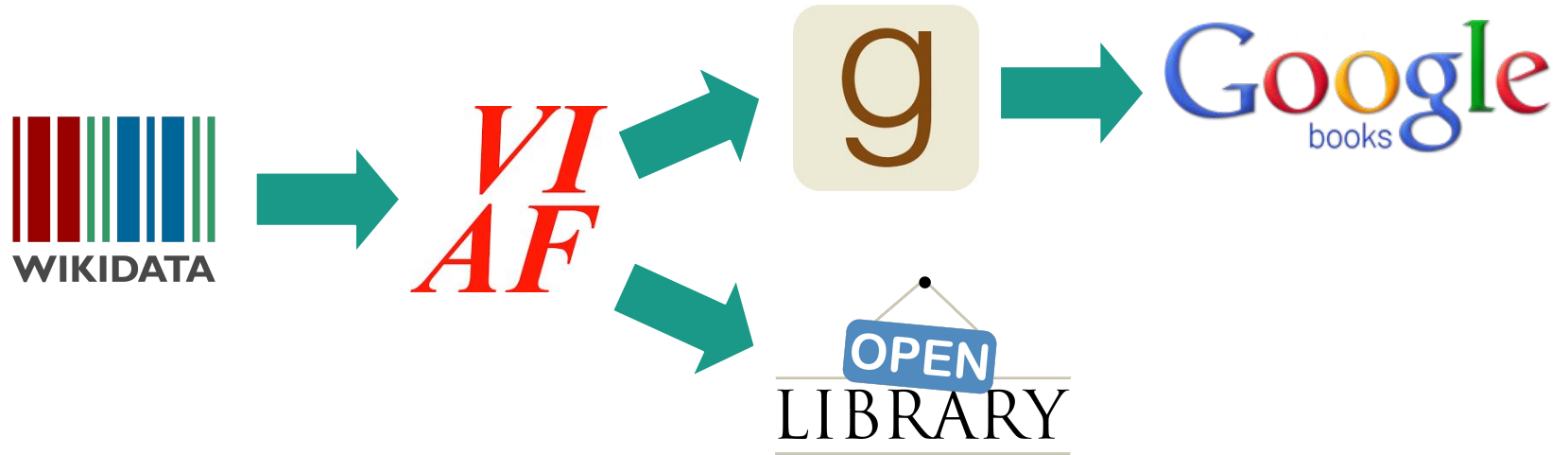
# Underrepresentation on Wikidata

The literary production of non-Western people still suffers a lack of representation in many digital archives





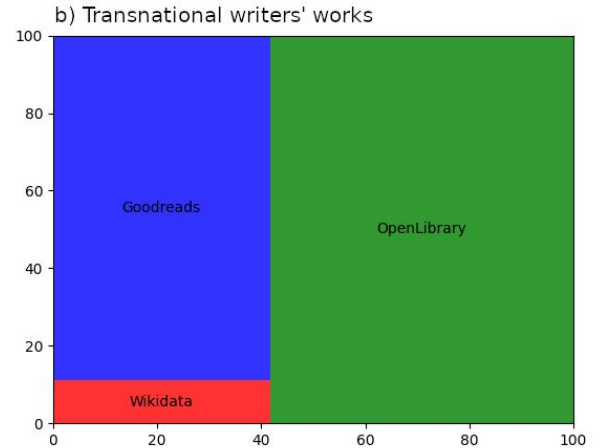
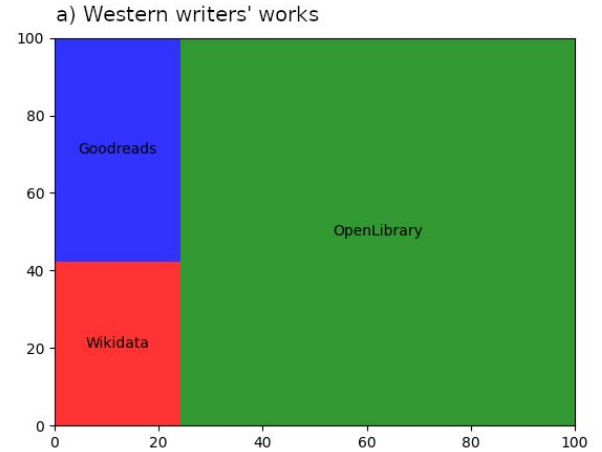
## Data Gathering pipeline



# Mapping

Source	Writers with at least 1 work (% Transnational)	N. of works
Wikidata	22, 515 (8.6%)	117, 798
Open Library	24, 370 (12.4%)	226, 108
Goodreads	60, 201 (11.0%)	627, 214
Total	71, 443 (10.6%)	971, 120

**Table 2.** Number of works for each platform

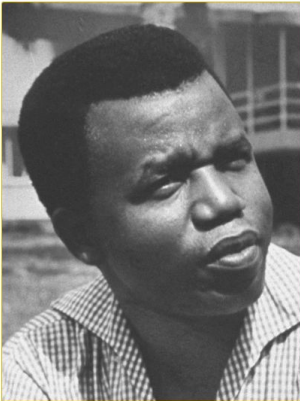




# Visualization Platform

- chinua
- Chinua Achebe
- Conversations with Chinua Achebe
- Chinua Achebe Reading Anthills of the Savannah and Arrow of God
- achebe, chinua
- https://en.wikipedia.org/wiki/Chinua\_Achebe

Person  
Chinua Achebe



IRI: https://purl.archive.org/urwriters#urw\_author\_1584

DataProvider	dataProvider_1
description	Nigerian novelist, poet, professor, and critic
has identifier	http://www.wikidata.org/...
image	http://commons.wikime... http://commons.wikime...

Expression  
Things Fall Apart with Connections

IRI: https://purl.archive.org/urbooks#urb\_work\_gr\_28921

DataProvider	dataProvider_1
--------------	----------------

wasAttributedTo



INFO

Work details: "Things Fall Apart with Connections".

YEAR OF PUBLICATION	1995 1997 1999
PUBLISHER	Holt McDougal
AUTHOR	Chinua Achebe
LANGUAGE	English
NUMBER OF REATINGS	196
RATING	★★★★ 3.23
SUBJECT	igbo (african people) achebe, chinua juvenile fiction fiction british
HTTP://WWW.W3.ORG/2002/07/TOWL/THING	Goodreads Reception
TYPE	Expression



# Biographical Event Detection





## What is biographical event detection?

Adichie was born in the city of Enugu in Nigeria, the fifth of six children in an Igbo family. She was raised in the university town of Nsukka in Enugu State. While she was growing up, her father, James Nwoye Adichie (1932–2020), worked as a professor of statistics at the University of Nigeria. Her mother, Grace Ifeoma (1942–2021) was the university's first female registrar



## Entity detection

**Adichie** was born in the city of Enugu in Nigeria, **the fifth** of six children in an Igbo family. **She** was raised in the university town of Nsukka in Enugu State. While **she** was growing up, her father, James Nwoye Adichie (1932–2020), worked as a professor of statistics at the University of Nigeria. Her mother, Grace Ifeoma (1942–2021) was the university's first female registrar



## Entity detection + Event detection

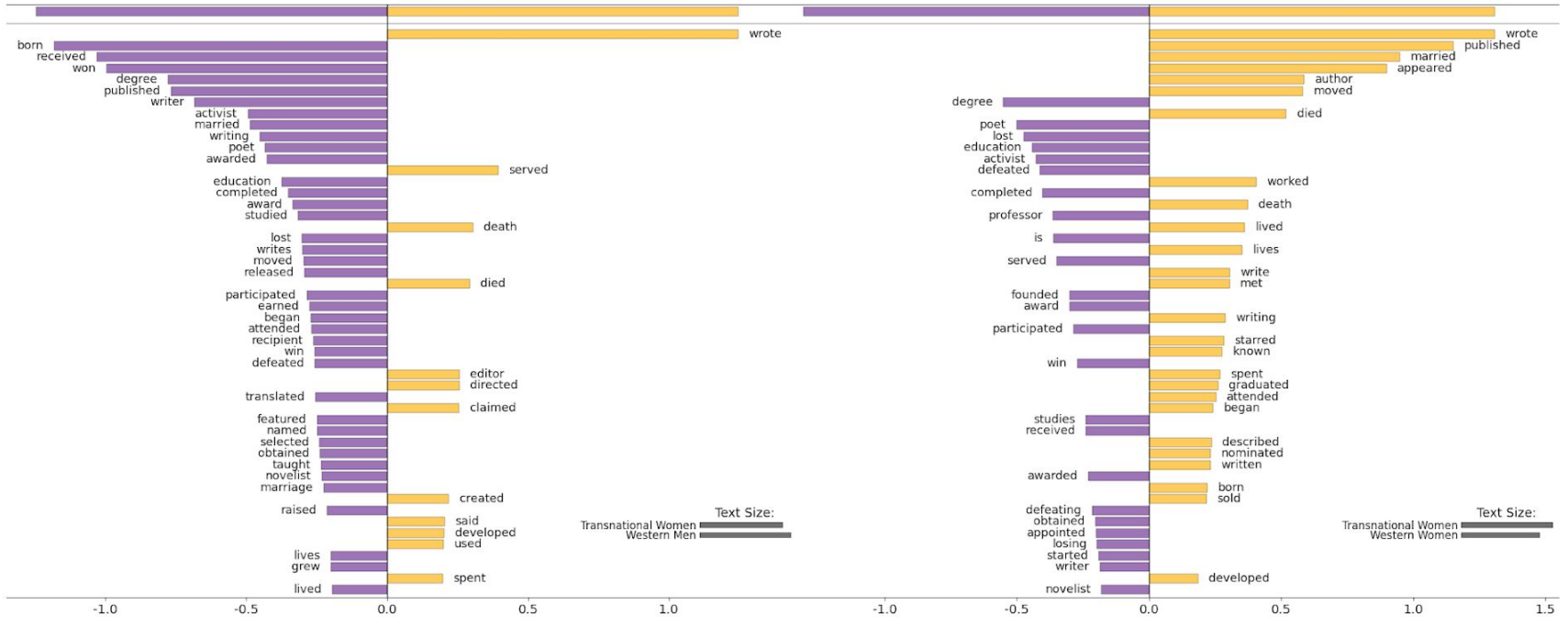
**Adichie** was **born** in the city of Enugu in Nigeria, **the fifth** of six children in an Igbo family. **She** was **raised** in the university town of Nsukka in Enugu State. While **she** was **growing** up, her father, James Nwoye Adichie (1932–2020), worked as a professor of statistics at the University of Nigeria. Her mother, Grace Ifeoma (1942–2021) was the university's first female registrar



## Our approach

1. We annotated and released Wikibio, a corpus of 20 Wikipedia biographies of African and African-American writers
2. We aligned the corpus with 5 existing resources
3. We trained a model to detect biographical events

# Applications: studying racial biases




# Applications: reducing underrepresentation

Transnational e Others (P108)





# Future work

- 
1. **Populating** the ontology with extracted biographical events
  2. **Improving** the resource and visualization platform with knowledge from experts
  3. **Implementing** a fair recommender system



---

**Thanks for your attention**

marcoantonio.stranisci@unito.it