

Collaboration Across the Archival and Computational Sciences to Address Legacies of Gender Bias in Descriptive Metadata

Lucy Havens, Rachel Hosker, Benjamin Bach, Melissa Terras, Beatrice Alex

Digital Humanities 2023

July 13, 2023



THE UNIVERSITY *of* EDINBURGH
informatics

FUNDED BY: ENGINEERING AND
PHYSICAL SCIENCES RESEARCH
COUNCIL; UNIVERSITY OF
EDINBURGH'S IGS, EFI, AND ILCC

Problem

Social biases *engineered* into
data and technology systems

Google

video call apps

Ad · <https://preland.mili.live/>

Random Video with Women - Private Video Call

Thousands of real and verified women are online and waiting for you to meet. Video chat with women. Sign up for Free. Bonus coins after registration. Exclusive girls. Guaranteed hot girl. Relaxing chat.

Ad · App Store · Pandalive

P Install now | Pandalive - Video Chat - Chat with girls on video...

4.3★ Rating | 6K Reviews | 91 MB App size

Live video chat with girls Video chat and meet with girls

Ads by Google

[Latanya Sweeney, Arrested?](#)
1) Enter Name and State. 2) Access Full Back Checks Instantly.
www.instantcheckmate.com/

[Latanya Sweeney](#)
Public Records Found For: **Latanya Sweeney**
www.publicrecords.com/

[La Tanya](#)
Search for La Tanya Look Up Fast Results no
www.ask.com/La+Tanya

(c)

LATANYA SWEENEY

1420 Centre Ave
Pittsburgh, PA 15219
DOB: Oct 27, 1959 (53 years old)

- Personal**
Name, aliases, birthdate, phone numbers, etc.
- Location**
Detailed address history and related data, maps, etc.
- Related Persons**
Known family members, business associates, roommates, etc.
- Marriage / Divorce**
Marriage and divorce records on file...
- Criminal History**
Arrest records, speeding tickets, mugshots, etc.

Criminal History

Rate This Content: ★★★★★

This section contains possible citation, arrest, and criminal records for the subject of this report. While our database does contain hundreds of millions of arrest records, different counties have different rules regarding what information they will and will not release.

We share with you as much information as we possibly can, but a clean slate here should not be interpreted as a guarantee that Latanya Sweeney has never been arrested; it simply means that we were not able to locate any matching arrest records in the data that is available to us.

Possible Matching Arrest Records

Name	County and State	Offenses	View Details
No matching arrest records were found.			

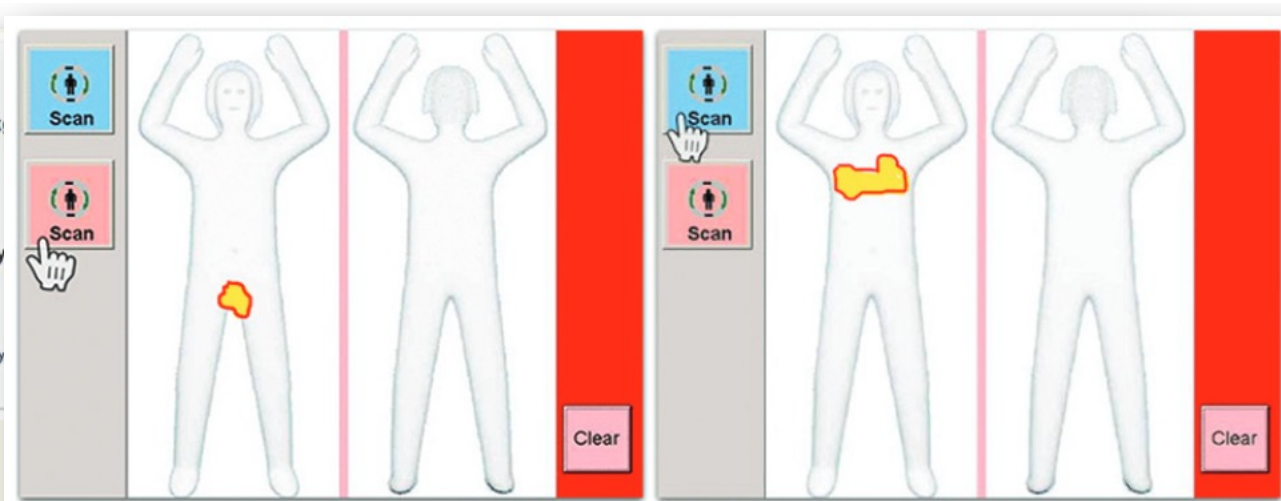
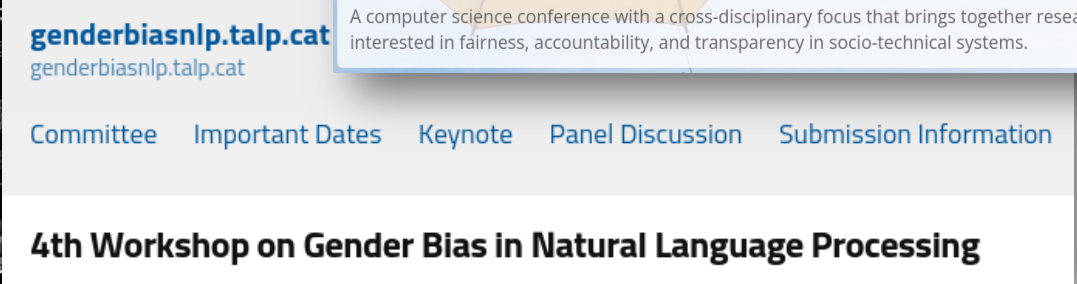
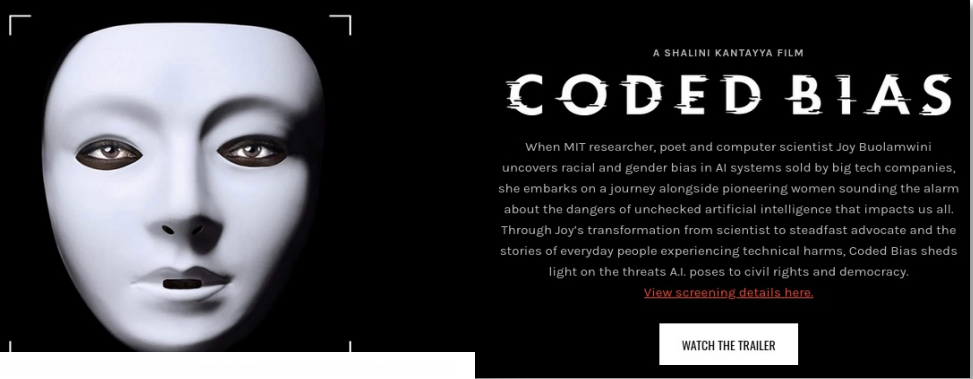
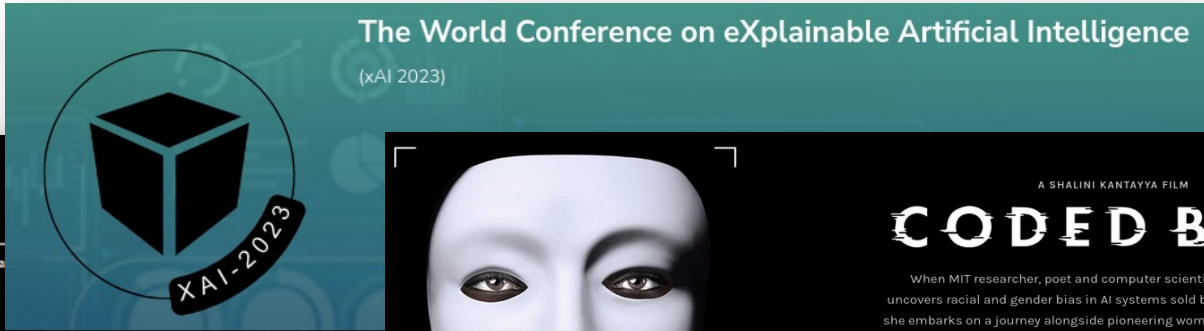
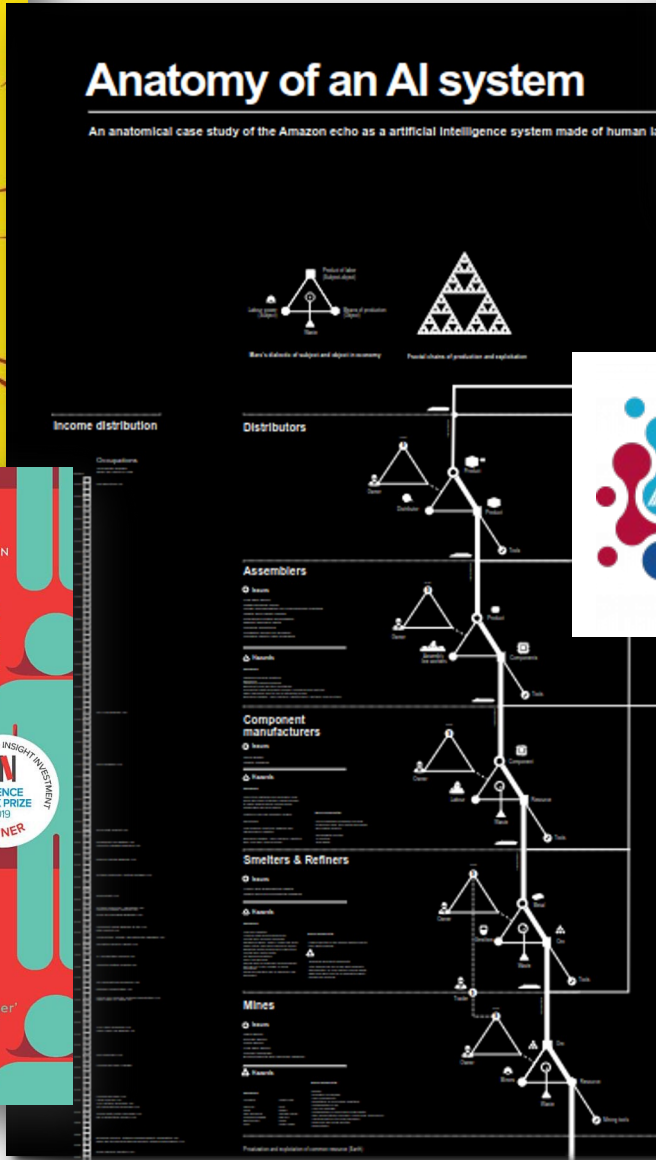
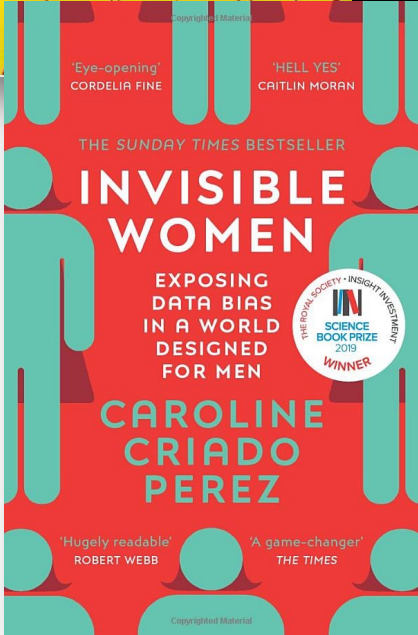
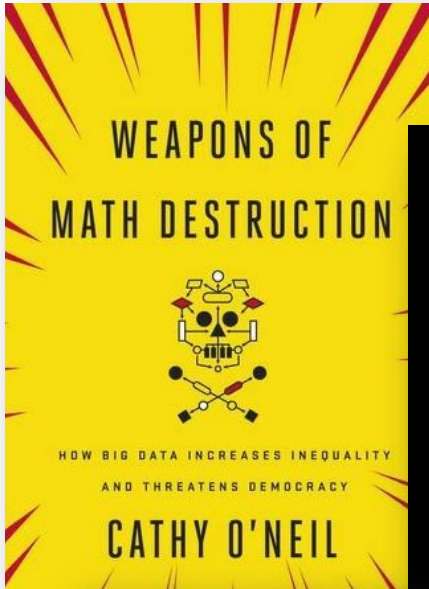


Figure 0.1
“Anomalies” highlighted in millimeter wave scanner interface. *Source: Costello 2016.*



Quantity

Convenience

Efficiency

Universal Thinking

Quality

Representativeness

Accuracy

Situated Thinking

What if we focus on
making social biases *transparent*
instead of
trying to remove them?

Quantity

Convenience

Efficiency

Universal Thinking

Quality

Representativeness

Accuracy

Situated Thinking

Quality

Representativeness

Accuracy

Situated Thinking

Quantity

Convenience

Efficiency

Universal Thinking



Case Study

Archives Catalog

Heritage Collections, University of Edinburgh, UK

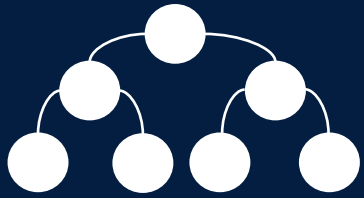
British English descriptions (circa 19th century to present)

Gender bias (21st century)

Research Questions

1. Can gender biased language be reliably annotated?
2. Can Machine Learning (ML) models be trained to identify types of gender biased language at scale?
3. How useful would such models be to catalogers, archivists, librarians, and curators?

Contributions



Taxonomy



Dataset



ML Models



Evaluation




Welcome to ArchivesSpace


Archives & Manuscripts collections in the Centre for Research Collections, University of Edinburgh

Search

Years: **To**

Susan Binnie Anderson

 **Fonds** Identifier: Coll-1052

 University of Edinburgh Library Heritage Collections |  Susan Binnie Anderson

[Collection Overview](#) [Collection Organization](#) [Container Inventory](#)

Scope and Contents

The material is composed of high school exam passes, photographs, pass

In the collection there is the Intermediate Certificate, dated 1913, issued by Intermediate Certificate in English, Mathematics, Science and Drawing, and Lower French.

The photographs (7) show: Binnie in her graduation dress (Yerbury, Edin.); salon-pose (A. Swan Watson, Edinburgh); Binnie in a group photo, Summer Session, 1919-1920 (A. Swan Watson, Edinburgh); group photo, no date, v date, woman in nursing wear.

There are 10 receipts in favour of University of Edinburgh, signed by Binnie registration with the General Council of the University. In addition there are Faculty of Medicine examination certificates 1916-1921, being: First Professional Examination in March 1917, and Physics, July 1917; Second Professional Examination in Professional Examination in Pathology and Elementary Bacteriology, Mater Public Health, July 1920; Final Examination in Midwifery, Medicine, Clinical Anderson Binnie has passed the Final Professional Examination for the De

Dated 19 December 1922, there is a Medical Registration Certificate issued of the UK, and in favour of Binnie, Susan Anderson. Issued by the same board after Instruction' on Vaccination certifying Binnie's competency as a public Latin, and 3 Second Class Honours Certificates issued by Edinburgh School Zoology, Elementary Botany, and Practical Botany. There are 4 certificates tickets for twenty-eight months, another two noting that Binnie acted as a 1917. Finally, there are 2 certificates issued by St. Mary's Hospitals, Manchester Department, November 1920.

There are 39 certificates issued by both the Royal Infirmary and the University of Edinburgh indicating the classes attended by Binnie between 1916 and 1921. The subjects range from Lower Extremity dissection, Zoology and Practical Zoology, Practical Histology, Practical Anatomy, Physics, Chemistry, and Practical Anaesthetics, to Diseases of Children, Midwifery and Gynaecology, and Mental Diseases. There are an additional 3 certificates indicating that she acted as a Clinical Clerk in the Clinical Surgery wards between 1918 and 1920. In addition there are 17 examples of the Second Class Certificate of Merit issued by the University (Faculty of Medicine) indicating that SUSAN Binnie had 'acquitted himself' as a member of class between 1916 and 1921, a certificate from Edinburgh School of Medicine for Women relevant to classes taken in 1916, a certificate of attendance at classes taken in 1919 at the Western Dispensary, Riego Street, Edinburgh, and an unused form for change of address issued by the Scottish Branch of the General Medical Council.

The collection also contains: 1 enrolment/non-matriculant ticket as extra-academical student, 1915-1916; various tickets both University and non-University; 5 enrolment/matriculation tickets over-printed with Civis Universitatis Academicæ Edinburgensis Kalendis Octobribus, and relevant to 1917, 1919, 1920, 1921, and 1922; and, 9 manuscript and typescript letters, being mainly letters of recommendation from a Lecturer on Diseases of Children, a Surgeon and Senior Lecturer, a Professor of Surgery, a Professor of Bacteriology, and Dean of the Faculty of Medicine, and dated between 3 May 1922 and 7 June 1922. [See less](#)

Dates

1913-1922

Language of Materials

English

Biographical / Historical

Susan Anderson Binnie was born on 19 June 1898, at Lynmill, Avonbridge, Stirlingshire. She was the sister of John Binnie, born in 1894. She was educated at Airdrie Academy, and then from 1915 she studied medicine at Edinburgh University where she was among the first women allowed to study with male medical students. Binnie graduated with the degrees of MB and ChB in the early 1920s. Her brother had also graduated as a doctor, and during the First World War he served on submarines.

In the post-War years, John Binnie set up a medical practice in Midcalder and Susan Binnie worked for him in the practice for a short while. She then worked as a pathologist at Bangour Hospital, West Lothian.

On 4 July 1925, at Lynmill, Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Kathleen and Margaret - she found it difficult to keep her medical career going, but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be.

Susan Anderson Binnie (Mrs Susan A. Moodie) died on 27 March 1975, in Edinburgh. [See less](#)

Papers of Florence Jewel Baillie, 1897-1969

Sub-Fonds Identifier: BAI 2



Citation



Request

University of Edinburgh Library Heritage Collections | Papers of Professor John Baillie, and Baillie Family Papers (BAI) | Papers of Florence Jewel Baillie, 1897-1969

Scope and Contents

The papers of Florence Jewel Baillie consist of:

1. correspondence from John Baillie
2. correspondence with the wider Fowler and Pearse families
3. diaries
4. general papers and correspondence

Dates

1897-1969

Creator

- Baillie, Florence Jewel, 1893-1969 (married to John Baillie) (Person)

Language of Materials

This material is in English

Physical Description

17 boxes

Biographical / Historical

Florence Jewel Fowler was born in 1893, at Erdington, near Birmingham, the daughter of Richard Fowler, land agent & surveyor, and his wife Florence Pearse. During the First World War, she was a volunteer with the British Expeditionary Force in France, where she met John Baillie and, after the end of the war, they married at Leamington Spa.

Jewel took an active interest in her husband's work, accompanying when he travelled, sitting on charitable committees, looking after missionary furlough houses and much more. She also wrote a preface to his *BAPTISM AND CONVERSION* and a foreward to his *A REASONED FAITH*. See less

Collection organization

Papers of Professor John Baillie, and Baillie ...

➤ Papers of John Baillie, 1900-1964

▼ Papers of Florence Jewel Baillie, 1897-19...

➤ Correspondence of Florence Jewel B...

Diaries and notebooks, 1917-1969

General Assembly, 1942-1947

➤ New Zealand trip, 1948, 1943-1948

American trip, 1954, 1943-1948

Account books, 1923-1964

Leaflets, booklets etc., 1944-1945

War, 1944-1945

Press cuttings, 1944-1945

Newspapers, 1934-1960

➤ Marriage of John Baillie and Florence Je...

➤ Items relating to or assembled by Ian Fo...

➤ Papers relating to John Baillie, Free Chur...

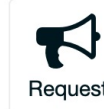
Papers relating to Annie Baillie, 1885-1934

➤ Papers relating to Donald Macpherson B...

➤ Papers relating to Peter Baillie, c1910-1914

➤ Papers relating to Elizabeth Catherine (E...

Or Ms 20: جامع التواريخ Jāmi' al-tawārīkh (Compendium of Chronicles), 714 A.H. (1314 C.E.)



Item Identifier: Or Ms 20

University of Edinburgh Library Heritage Collections | Manuscripts of the Islamicate World and South Asia (Or Ms) | Or Ms 20: جامع التواريخ Jāmi' al-tawārīkh (Compendium of Chronicles), 714 A.H. (1314 C.E.)

Scope and Contents

This manuscript, among the most iconic items held by Edinburgh University Library, is one of the supreme masterpieces of Persian book painting and one of the most important medieval manuscripts from either West or East. *Jāmi' al-tawārīkh* was written by the historian and vizier to the Ilkhanid court, Rashīd al-Dīn Faḡl-allāh Ṭabīb Hamadānī (ca. 1247-1318 C.E.), and copied in Tabriz by the author's own scribes and illustrators. This fragment of the manuscript is undated but a separate fragment of the same manuscript (held by the Khalili Collection) is dated 714 AH (1314 C.E.). Created during the author's lifetime, it one of the earliest copies in existence. [See less](#)

This work is a world history which encompasses a range of cultures, from China in the East, to Ireland in the West, from the time of Adam. It is written in the Naskh script and contains 70 illustrated folios.

Dates

714 A.H. (1314 C.E.)

Creator

- Rashīd al-Dīn Ṭabīb, ca. 1247-1318 (historian, physician, inventor) (Author, Person)

Language of Materials

Arabic

Conditions Governing Access

Open. Please contact the repository in advance.

Biographical / Historical

While serving as a high-ranking adviser to the Ilkhanid court, the former physician and court historian Rashid al-Din (d. 1318) was commissioned to compile what would become one of the most important historical and artistic documents within Islamic intellectual tradition. The *Jami' al-Tawarikh* was to be an illustrated history of the world as it was known to the Mongol court, covering not only the history of the Mongols, but also that of the Chinese, Franks and Indians. Situated in the highly international and multi-cultural city of Tabriz in modern-day Iran, the scriptorium of Rashid al-Din gathered artists from all parts of the Mongol empire and beyond. [See less](#)



Collection organization

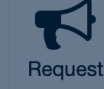
- Or Ms 18: الحدود والقصاص والتعزيرات في فقهه Fiqh fī al-ḥudūd ...
- Or Ms 19: تاريخ الامم والملوك Tārīkh al-umam wa-al-mulū...
- Or Ms 20: جامع التواريخ Jāmi' al-tawārīkh (Compendium ...)
- Or Ms 21: وفيات الاعيان Wafayāt al-a'yān, undated copy (...)
- Or Ms 22: وفيات الاعيان Wafayāt al-a'yān, undated copy (...)
- Or Ms 23: المنهل الصافي والمستوفي بعد الوافي al-Manhal al-ṣāfi...
- Or Ms 24: كشف الظنون عن أسامي الكتب والفنون Kashf al-ẓunū...
- Or Ms 25: الجامع لقوى الاودييه والاغنيه al-Jāmi' liquwā al-ad...
- Or Ms 26: مفتاح الحساب Miftāḥ al-ḥisāb, 1092 A.H., 1681 ...
- Or Ms 27: تحرير اقليدس Taḥrīr Uqlīdus, 882 A.H. and 982 ...
- Or Ms 28: مخروطا طابو ابلونيوس Makhruṭāt Iblawniyūs, early ...
- Or Ms 29: اخوان الصفا Ikhwān al-ṣafā, 1227 A.H., 1812 ...
- Or Ms 30: موارد الكلم وسلك درر الحكم Mawārid al-kilam wa...
- Or Ms 31: مصنعة الاعراب في صنعة المفضل al-Mufaṣṣal fī ṣan'at al-...
- Or Ms 32: شرح الشافيه Sharḥ al-Shāfiyah, undated copy (...)
- Or Ms 33: شرح الكافيه al-Wāfiyah fī sharḥ al-Kāfi...
- Or Ms 34: مغني اللبيب عن كتب الاعراب Mughnī al-labīb 'an ...
- Or Ms 35: مغني اللبيب عن كتب الاعراب Mughnī al-labīb 'an ...
- Or Ms 36: رسالة في علم الاعراب Risālat fī 'ilm al-i'rāb, 1225...
- Or Ms 37: نادر البيان في علم النحو Nādīr al-bayān fī 'ilm al-n...

RQ 1: Can gender biased language be reliably annotated?

Gender biased language:

- **Omission:** exclusion, silence, absence

Designs of Marie Laurencin



Citation

Request

Print

Fonds Identifier: Coll-1090

University of Edinburgh Library Heritage Collections | Designs of Marie Laurencin

Collection Overview Collection Organization Container Inventory

Scope and Contents

The collection is composed of 7 watercolour paintings/sketches which may be by Marie Laurencin. The paintings are undated. The signatures are underlined. Each is stamped with the Edinburgh University Reid Music Library mark, and a sign resembling upper-case letter 'L' over letter upper-case 'O'.

The watercolours were in an envelope noted with 'M78 BLOW-26' in top-left, and 'P5231 G-N' in top-right. The envelope notes the titles of each watercolour, and these are listed as: See less

involved with Apollinaire until 1913. In 1908, Laurencin achieved her first sale when Gertrude Stein purchased Group of artists. This group portrait of Laurencin, Apollinaire, and Picasso and his mistress became the theme of a larger version in 1909 entitled Apollinaire and his friends. In 1911 she exhibited in the Salon des Independants, and she began illustrating books. The

1. The Shepherdess (P5231 K)
2. The Shepherd (P5231 L)
3. The Three Graces (P5231 M)
4. The Shepherdess (P5231 K)
5. The Shepherd (P5231 L)
6. The Three Graces (P5231 M)
7. The Imaginary portrait of John Blow and his Lady (P5231 N)

There is no 'J' noted in the list, simply 'G-N'.

Dates

1902-1920?

Language of Materials

English



Biographical / Historical

Marie Laurencin was born in Paris on 31 October 1883. She attended the Lycee Lamartine in the city before studying porcelain painting at the Sevres factory. Later on she entered the Academie Humbert. In 1907 she exhibited at the Clovis Sagot gallery in Montmartre, and there she was introduced to Guillaume Apollinaire by Pablo Picasso and she became romantically involved with Apollinaire until 1913. In 1908, Laurencin achieved her first sale when Gertrude Stein purchased Group of artists. This group portrait of Laurencin, Apollinaire, and Picasso and his mistress became the theme of a larger version in 1909 entitled Apollinaire and his friends. In 1911 she exhibited in the Salon des Independants, and she began illustrating books. The ending of her relationship with Apollinaire in 1913 also saw the end of her Cubist-inspired period.

In 1913, Laurencin established a contract with the art dealer Paul Rosenberg which would last until 1940, and in 1914 she married the German Baron, Otto von Waetjen. On the outbreak of war however they fled to Spain and spent time in Madrid and Barcelona, and then also to Germany. In 1921 she returned to Paris and in the same year she divorced von Waetjen. The early-1920s saw Laurencin designing sets and costumes most notably for the Ballets Russes -Les Biches- as well as painting society portraits including that of Coco Chanel. In the 1930s she was teaching at the art academy, Villa Malakoff. In 1942 she published Le Carnet des nuits. In 1944, her apartment on Rue Savorgnan de Brazza was requisitioned by the Germans and she did not get it back until 1953.

Marie Laurencin died in Paris on 8 June 1956 and she was buried in the cemetery Pere Lachaise. See less

Burmese Hairy Family, 1870s-1930s

 Citation
  Request

Item Identifier: Coll-1434/701

University of Edinburgh Library Heritage Collections | Roslin Slide Collection (Coll-1434) | Burmese Hairy Family, 1870s-1930s

Scope and Contents

Photograph of a Burmese family of three, mother, father and son, who have Hypertrichosis in the late 19th or early 20th century.

Dates

1870s-1930s

Photograph of a Burmese family of three, mother, father and son, who have Hypertrichosis in the late 19th or early 20th century.

Physical Description

1 slide 82mm by 83mm

Conditions Governing Access

Open.

Extent

From the Fonds: 50 boxes, 3,465 slides

Expand All

Additional Description

Subjects

Related Names

Collection organization

- Man Posing with a Hoe in a Forest, 1870s-1930s
- Aqueduct of Belem, 1870s-1930s
- Palacio Central, Ruins of Hoch-ob, Campeche, 1870s
- Negrette and the Children of James Reid, 1870s-1930s
- Harry Foster's House (Cost £1000), 1870s-1930s
- William McCall's House, 1870s-1930s
- Las Monjas, Uxmal, 1870s-1930s
- Palace of Cortez, Cuernavaca, 1870s-1930s
- Patio of the Jockey Club, 1870s-1930s
- Plaza de Santo Domingo, 1870s-1930s
- Government House, La Paz, 1870s-1930s
- Ruins, 1870s-1930s
- Deeply Rooted Plants, 1870s-1930s
- Burmese Hairy Family, 1870s-1930s**
- Alfalfa Breeding Plots, 1870s-1930s
- Alfalfa, 1870s-1930s

RQ 1: Can gender biased language be reliably annotated?

Gender biased language:

- **Omission**: exclusion, silence, absence
- **Stereotype**: overly simplified, judgmental, identity limiting, upholding societal power imbalances

Susan Binnie Anderson

Fonds Identifier: Coll-1052

University of Edinburgh Library Heritage Collections | Susan Binnie Anderson

Collection Overview Collection Organization Container Inventory

There are 39 certificates issued by both the Royal Infirmary and the University of Edinburgh indicating the classes attended by Binnie between 1916 and 1921. The subjects range from Lower Extremity dissection, Zoology and Practical Zoology, Practical Histology, Practical Anatomy, Physics, Chemistry, and Practical Anaesthetics, to Diseases of Children, Midwifery and Gynaecology, and Mental Diseases. There are an additional 3 certificates indicating that she acted as a Clinical Clerk for the Clinical Department between 1919 and 1920, and 17 certificates of the General Council of Medical Education.

Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Margaret - she found it difficult to keep her medical career going but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be.

Portrait of Susan Binnie Anderson (A. Swan Watson, Edinburgh); Binnie in a group photo, Summer Session, 1919-1920 (A. Swan Watson, Edinburgh); group photo, no date, v. 10, no. 1, date, woman in nursing wear.

There are 10 receipts in favour of University of Edinburgh, signed by Binnie in 1916-1921, being: First Professional Examination in Medicine, March 1917, and Physics, July 1917; Second Professional Examination in Medicine, July 1917; Professional Examination in Pathology and Elementary Bacteriology, Mater Hospital, July 1920; Final Examination in Midwifery, Medicine, Clinical Medicine, July 1920; Final Examination in Pathology and Elementary Bacteriology, Mater Hospital, July 1920. Susan Anderson Binnie has passed the Final Professional Examination for the Degree of Bachelor of Medicine.

Dated 19 December 1922, there is a Medical Registration Certificate issued by the General Council of the Medical Profession of the UK, and in favour of Binnie, Susan Anderson. Issued by the same body as the 'Certificate of Instruction' on Vaccination certifying Binnie's competency as a public health officer, and 3 Second Class Honours Certificates issued by Edinburgh School of Medicine, July 1920; Final Examination in Midwifery, Medicine, Clinical Medicine, July 1920; Final Examination in Pathology and Elementary Bacteriology, Mater Hospital, July 1920. There are 4 certificates of the General Council of Medical Education for twenty-eight months, another two noting that Binnie acted as a Clinical Clerk for the Clinical Department between 1919 and 1920. Finally, there are 2 certificates issued by St. Mary's Hospitals, Manchester, November 1920.

Dates

1913-1922

Language of Materials

English

Biographical / Historical

Susan Anderson Binnie was born on 19 June 1898, at Lynmill, Avonbridge, Stirlingshire. She was the sister of John Binnie, born in 1894. She was educated at Airdrie Academy, and then from 1915 she studied medicine at Edinburgh University where she was among the first women allowed to study with male medical students. Binnie graduated with the degrees of MB and ChB in the early 1920s. Her brother had also graduated as a doctor, and during the First World War he served on submarines.

In the post-War years, John Binnie set up a medical practice in Midcalder and Susan Binnie worked for him in the practice for a short while. She then worked as a pathologist at Bangour Hospital, West Lothian.

On 4 July 1925, at Lynmill, Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Kathleen and Margaret - she found it difficult to keep her medical career going, but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be.

Susan Anderson Binnie (Mrs Susan A. Moodie) died on 27 March 1975, in Edinburgh. See less

Papers of Florence Jewel Baillie, 1897-1969

Sub-Fonds Identifier: BAI 2



Citation



Request

University of Edinburgh Library Heritage Collections | Papers of Professor John Baillie, and Baillie Family Papers (BAI) | Papers of Florence Jewel Baillie, 1897-1969

Scope and Contents

The papers of Florence Jewel Baillie consist of:

1. correspondence from John Baillie

Jewel took an active interest in her husband's work, accompanying when he travelled, sitting on charitable committees, looking after missions and much more. She also wrote a preface to his *BAPTISM AND CONVERSION* and a foreward to his *A REASONED FAITH*. See less

1897-1969

Creator

- Baillie, Florence Jewel, 1893-1969 (married to John Baillie) (Person)

Language of Materials

This material is in English

Physical Description

17 boxes

Biographical / Historical

Florence Jewel Fowler was born in 1893, at Erdington, near Birmingham, the daughter of Richard Fowler, land agent & surveyor, and his wife Florence Pearse. During the First World War, she was a volunteer with the British Expeditionary Force in France, where she met John Baillie and, after the end of the war, they married at Leamington Spa.

Jewel took an active interest in her husband's work, accompanying when he travelled, sitting on charitable committees, looking after missionary furlough houses and much more. She also wrote a preface to his *BAPTISM AND CONVERSION* and a foreward to his *A REASONED FAITH*. See less

Collection organization

Papers of Professor John Baillie, and Baillie ...

General Assembly, 1942-1947

➤ New Zealand trip, 1948, 1943-1948

American trip, 1954, 1943-1948

Account books, 1923-1964

Leaflets, booklets etc., 1944-1945

War, 1944-1945

Press cuttings, 1944-1945

Newspapers, 1934-1960

➤ Marriage of John Baillie and Florence Je...

➤ Items relating to or assembled by Ian Fo...

➤ Papers relating to John Baillie, Free Chur...

Papers relating to Annie Baillie, 1885-1934

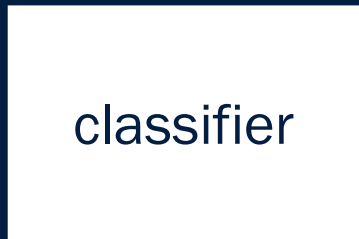
➤ Papers relating to Donald Macpherson B...

➤ Papers relating to Peter Baillie, c1910-1914

➤ Papers relating to Elizabeth Catherine (E...

On 4 July 1925, at Lynmill, Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Kathleen and Margaret - she found it difficult to keep her medical career going, but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be. Jewel took an active interest in her husband's work, accompanying him when he travelled, sitting on charitable committees, looking after missionary turrough houses and much more. She also wrote a preface to his *BAPTISM AND CONVERSION* and a foreward to his *A REASONED FAITH*. See less

Model Creation



*train on
manual
annotations*

On 4 July 1925, at Lynmill, Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Kathleen and Margaret, she found it difficult to keep her medical career going, but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be. Jewel took an active interest in her husband's work, accompanying when he travelled, sitting on charitable committees, looking after missionary turrough houses and much more. She also wrote a preface to his *BAPTISM AND CONVERSION* and a foreward to his *A REASONED FAITH*. See less

Model Creation

classifier

Susan Anderson Binnie was born on 19 June 1898, at Lynmill, Avonbridge, Stirlingshire. She was the sister of John Binnie born in 1894. She was educated at Airdrie Academy, and then from 1915 she studied medicine at Edinburgh University where she was among the first women allowed to study with male medical students. Binnie graduated with the degrees of MB and ChB in the early 1920s. Her brother had also graduated as a doctor, and during the First World War he served on submarines.

run the classifier on new data

On 4 July 1925, at Lynmill, Avonbridge, Binnie married Donald Moodie, an artist on the staff of Edinburgh College of Art. As a young married woman with two small children - Kathleen and Margaret - she found it difficult to keep her medical career going, but she was able to undertake a few locums in the Highlands and Islands, on Papa Westray in Orkney, and on Coll, and in Easter Ross. She twice tried to return to medicine full-time but this just wasn't to be. Jewel took an active interest in her husband's work, accompanying when he travelled, sitting on charitable committees, looking after missionary turrough houses and much more. She also wrote a preface to his BAPTISM AND CONVERSION and a foreward to his A REASONED FAITH. See less

Model Creation

classifier

Susan Anderson Binnie was born on 19 June 1898, at Lynmill, Avonbridge, Stirlingshire. She was the sister of John Binnie born in 1894. She was educated at Airdrie Academy, and then from 1915 she studied medicine at Edinburgh University where she was among the first women allowed to study with male medical students. Binnie graduated with the degrees of MB and ChB in the early 1920s. Her brother had also graduated as a doctor, and during the First World War he served on submarines.

compare classifier and manual annotations

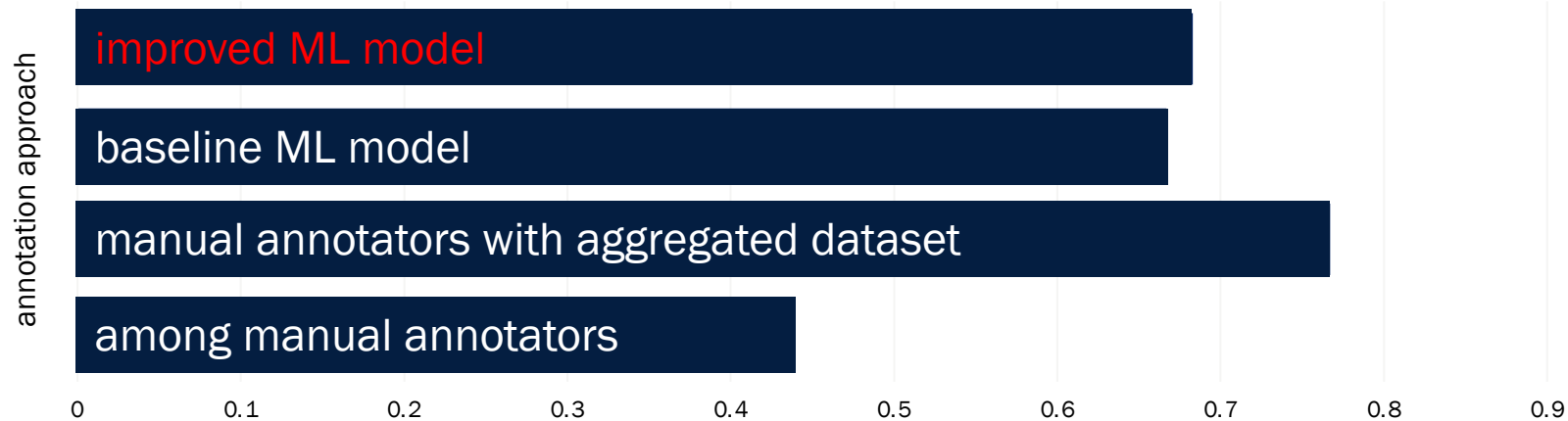
Susan Anderson Binnie was born on 19 June 1898, at Lynmill, Avonbridge, Stirlingshire. She was the sister of John Binnie born in 1894. She was educated at Airdrie Academy, and then from 1915 she studied medicine at Edinburgh University where she was among the first women allowed to study with male medical students. Binnie graduated with the degrees of MB and ChB in the early 1920s. Her brother had also graduated as a doctor, and during the First World War he served on submarines.

Results, part I

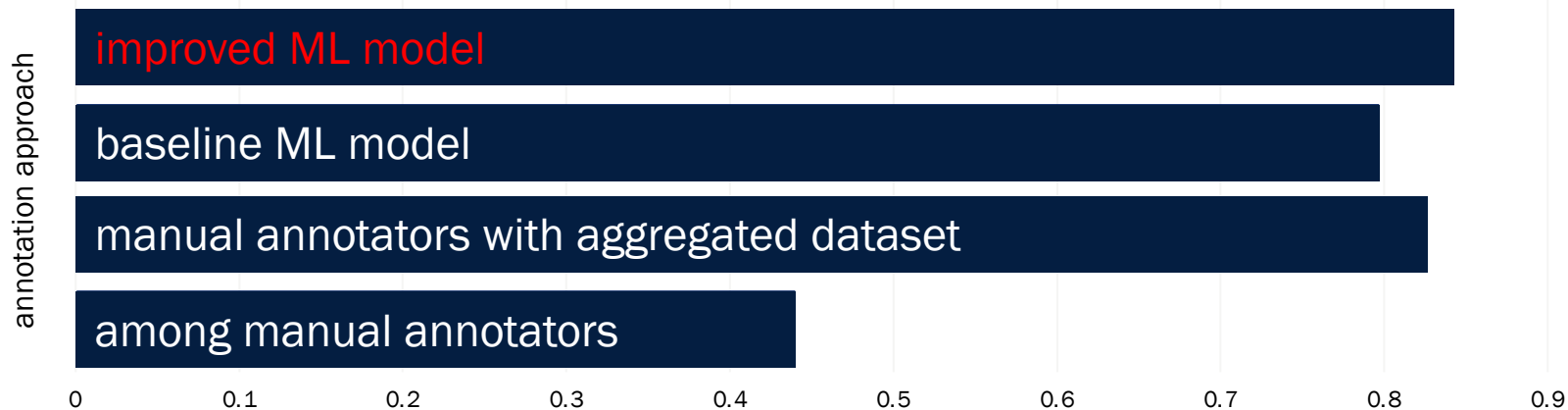
RQ 2: Can Machine Learning models be trained to identify types of gender biased language at scale?



F1 scores* for Annotating with the Omission label



F1 scores* for Annotating with the Stereotype label

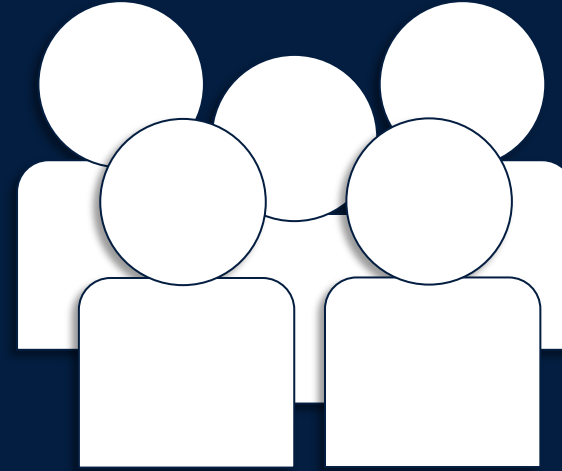


*F1: 0 - 1

1 is best

Results, part II

RQ 3: How useful would such models be to catalogers, archivists, librarians, and curators?



Gender and Gender Biased Language Classifier Review

Taxonomy of Gendered and Gender Biased Language

Labels are grouped into three categories; the labels are the bolded, lettered list items.

1. Person Name – labels applied based on the grammatical gender of terms referring to a person
 - a. **Unknown**
 - b. **Feminine**
 - c. **Masculine**
 - d. **Nonbinary** – *not used during the annotation process*
2. Linguistic
 - a. **Gendered Pronoun**
 - b. **Gendered Role** – e.g., mother, Sir, boy, Queen
 - c. **Generalization** – assumption made about a people's gender identity (e.g., a computer)
3. Contextual
 - a. **Occupation** – job title, e.g., baker, author, Professor of...
 - b. **Stereotype***
 - c. **Omission***

*All labels except 3b and 3c are applied on individual words; 3b and 3c are applied to entire descriptions.

Notes on the Dataset

Descriptions were extracted from four metadata fields of the Archives catalogue: Title, Scope and Content, and Accession Information.

The data viewed in this workshop is based on the first 20% of the Archives catalogue as it was w

Example 1

Broadcast of the service comemorating [sic] the centenary of the death of **Unknown** Henry Duncan, at which **Masculine** John Baillie was **Occupation** preacher **Pron** He gave a biographical talk on **Unknown** Duncan's life and work.

Example 2

Mixture of press cuttings covering many subjects including articles on **Stereotype** Deitrich Bonhoeffer, ... Second World War, housekeeping tips and matters of general interest to **Unknown** Florence Jewel Baillie.

Example 3

Correspondence and related items, relating to the attendance [sic] of **Masculine** John Baillie and **Pron** his **Role** wife at the coronation of **Unknown** Elizabeth II.

Gender and Gender Biased Language Dashboard

Top Fonds with Most **Stereotype** Labels

eadid	count	title
Coll-1434	919	Roslin Slide Collection
Coll-146	309	Papers of Arthur Koestler
BAI	55	Papers of Professor John Baillie, and Baillie Family Papers
Coll-1310	42	Papers of Godfrey H. Thomson
Coll-1057	32	Papers of Alan W. Greenwood
Coll-1320	15	Corson Collection
Coll-1036	10	Papers of Marjory Kennedy-Fraser
Coll-1364	8	Papers of Richard Alan Beatty
Coll-1022	6	Papers of Ian Wilmut
Coll-1255	5	Papers of Geoffrey Beale, founder of malaria genetics and Royal Society professor

Most Common Languages of those Fonds

Languages not pictured appear in only 1 fonds

language	fonds_count
English	9
French	5
German	5
Italian	2
Russian	2

Top Fonds with Most **Omission** Labels

eadid	count	title
Coll-1434	1352	Roslin Slide Collection
Coll-146	735	Papers of Arthur Koestler
Coll-1310	637	Papers of Godfrey H. Thomson
Coll-1064	239	Papers of Professor Walter Ledermann
Coll-1255	164	Papers of Geoffrey Beale, founder of malaria genetics and Royal Society professor
Coll-1364	115	Papers of Richard Alan Beatty
Coll-1383	81	Collection of Ian R. Grant, antiquarian
Coll-1057	74	Papers of Alan W. Greenwood
BAI	50	Papers of Professor John Baillie, and Baillie Family Papers
Coll-1036	44	Papers of Marjory Kennedy-Fraser

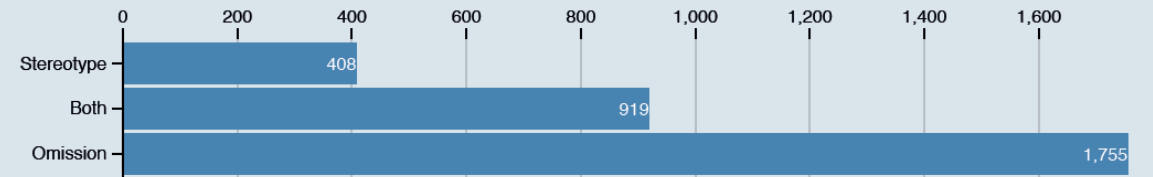
Most Common Languages of those Fonds

Languages not pictured appear in only 1 fonds

language	fonds_count
English	10
French	6
German	5
Italian	3
Latin	2
Russian	2
Scottish Gaelic	2
Scots	2

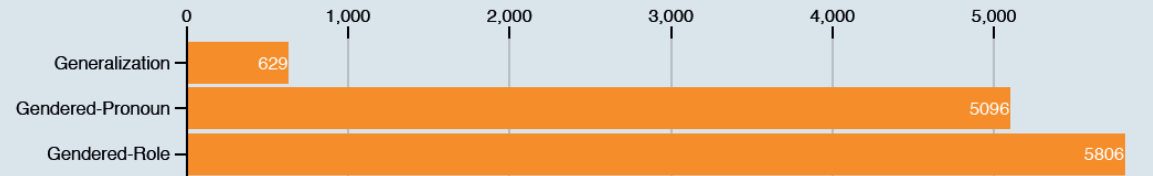
Count of Descriptions Classified with **Stereotype & Omission** Labels

24,230 descriptions received neither a **Stereotype** nor an **Omission** label.

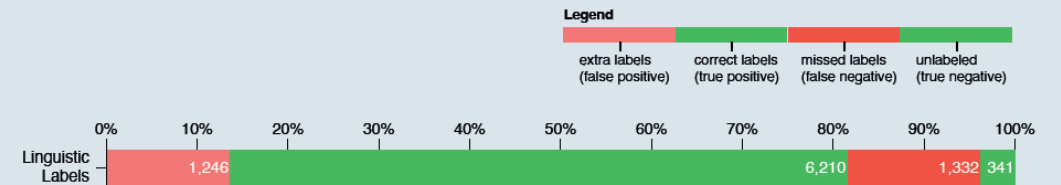


Count of Words Classified with **Gendered Pronoun, Gendered Role & Generalization** Labels

767,273 words received neither a **Gendered Pronoun**, **Gendered Role**, nor a **Generalization** label.



Classifier's **Performance** on those labels (Gendered Pronoun, Gendered Role, Generalization)



Results, part II

Model **strengths**:

- Support collection reviews
- Guide description “best practices”
- Facilitate self-reflection

Results, part II

Model **strengths**:

- Support collection reviews
- Guide description “best practices”
- Facilitate self-reflection

Model **limitations**:

- Inevitability of bias
- Difficulty tracing origins of bias
- Uncertainty in descriptions

Problem

Social biases *engineered* into
data and technology systems

Quality

Representativeness

Accuracy

Situated Thinking

Quantity

Convenience

Efficiency

Universal Thinking

Recommendations

For the computational sciences

Consider quality, representativeness, accuracy, situated thinking; collaborate!

For Galleries, Libraries, Archives, and Museum (GLAM)

Value in bringing ML to cataloging practices (cautiously) and in bringing own approaches to ML processes

For Historians, Digital Humanitists

No tool, description, or dataset is neutral; combine ML with GLAM experts' knowledge and existing practices

Thank you!



Situated Data, Situated Systems: A Methodology to Engage with Power Relations in NLP Research



Beyond Explanation: A Case for Exploratory Text Visualizations of Non-Aggregated, Annotated Datasets



Uncertainty and Inclusivity in Gender Bias Annotation: An Annotation Taxonomy and Annotated Datasets of British English Text



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Appendix

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D'Ignazio, Catherine and Klein, Lauren F. 2020. *Data Feminism*. MIT Press.

Keyes, Os. 2018. "The Misgendering Machines." *Association for Computing Machinery*.

Taxonomy of Gendered and Gender Biased Language

1. Person-Names

- A. Unknown
- B. *Non-binary*
- C. Feminine
- D. Masculine

2. Linguistic

- A. Gendered Pronoun
- B. Gendered Role
- C. Generalization

3. Contextual

- A. *Empowering*
- B. Occupation
- C. Omission
- D. Stereotype

Taxonomy of Gendered & Gender Biased Language

RQ 1, Step 2

1. Linguistic
 - a. Gendered Pronoun
 - b. Gendered Role
2. Person Name
 - a. Feminine
 - b. Masculine
 - c. Non-binary
 - d. Unknown
3. Contextual
 - a. Occupation
 - b. Omission
 - c. Stereotype

Manual annotation – £5k + 400 hours

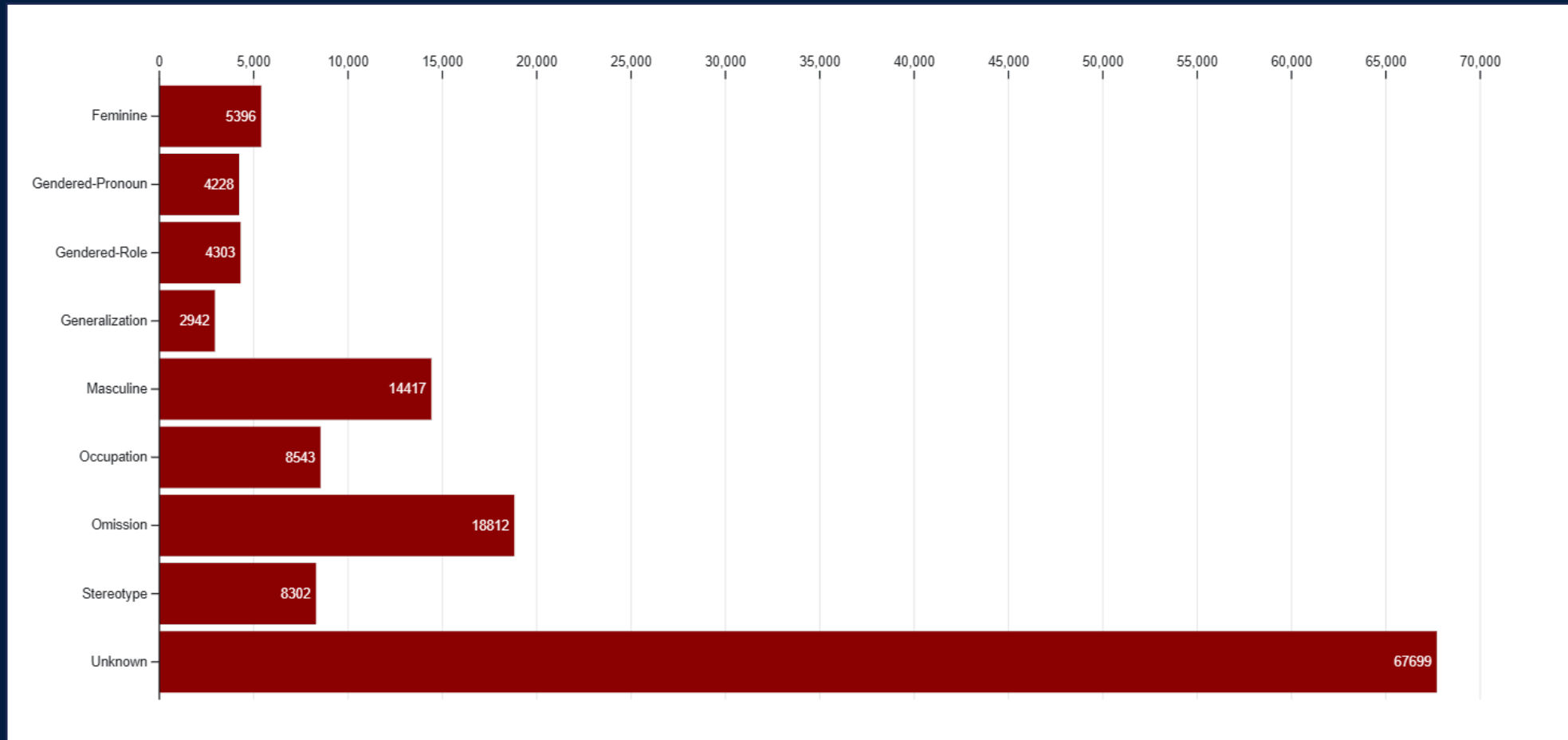
RQ 1, Step 3

3 Biographical / Historical:

4 John Baillie was born in 1886, the son of Rev John Baillie (1829-1891), Free Church minister at Gairloch, Ross & Cromarty in the north-west of Scotland, and his wife Annie Macpherson. John (senior) was a graduate of both the University of Edinburgh and Free Church College, Edinburgh Following the death of his father in 1891, the family home was at Inverness and John (junior) was educated at Inverness Royal Academy and the University of Edinburgh. More study was undertaken at both the universities of Jena and Marburg and he held assistant positions at the University of Edinburgh before entering the church, as an assistant in 1912 and then being ordained in 1920. The First World War saw Baillie playing an active role in both the YMCA and the British Expeditionary Force.

The end of that war saw his marriage to Florence Jewel Fowler and the start of his academic career. He held a number of chairs at the Auburn and Union Theological Seminaries, New York, and at Emmanuel College, Toronto, but he eventually returned to Edinburgh to become Professor of Divinity at New College in 1934. The advent of the Second World War saw Baillie use the North American links he had maintained to help persuade US entry into the conflict. He was elected as Moderator of the General Assembly of the Church of Scotland and became Dean of the Faculty of Divinity at Edinburgh in 1950, holding this position until retriial six years later. As part of the ecumenical movement, John Baillie was member of both the British Council of Churches and the World Council of Churches; he became a President of the latter. John Baillie's brother, Donald Macpherson Baillie (1887-1954) was educated at Inverness Royal Academy and at the Universities of Edinburgh, Marburg and Heidelberg. He graduated with an MA from New College Edinburgh in 1909, and he spent some time with the YMCA in France before being ordained in 1918 and was minister of Bervie United Free Church until 1923. Moving to St. John's, Cupar he was there until 1930 and then at St. Columba's, Kilmacolm until 1934.

38% of tokens in descriptions annotated with a label



Three Classification Models

Linguistic Classifier

Annotate tokens (words), multiple labels per token
Labels: Gendered Pronoun, Gendered Role

Person Name & Occupation
Classifier

Annotate tokens, at most one label per token
Labels: Unknown, Feminine, Masculine, Occupation

Omission & Stereotype
Classifier

Annotate documents (descriptions)
Labels: Omission, Stereotype

Model Cascades

Linguistic Classifier

Annotate tokens (words), multiple labels per token
Labels: Gendered Pronoun, Gendered Role

Person Name & Occupation
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Annotate tokens, at most one label per token
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Omission & Stereotype
Classifier

Annotate documents (descriptions)
Labels: Omission, Stereotype

Model Cascades

Linguistic Classifier

Annotate tokens (words), multiple labels per token
Labels: Gendered Pronoun, Gendered Role



Person Name & Occupation
Classifier

Annotate tokens, at most one label per token
Labels: Unknown, Feminine, Masculine, Occupation



Omission & Stereotype
Classifier

Annotate documents (descriptions)
Labels: Omission, Stereotype

RQ 2: Can a classification model annotate gender biases?

Yes!

Linguistic labels (Gendered Pronoun, Gendered Role) most helpful for classifying descriptions with **Omission** label

Person Name (Feminine, Masculine, Unknown) and Occupation labels most helpful for classifying descriptions with **Stereotype** label

Model Cascades

Linguistic Only

label	FN	FP	TP	precision	recall	F ₁
Omission	1714	442	2318	0.840	0.575	0.683
Stereotype	389	80	1212	0.938	0.757	0.838
macro				0.889	0.666	0.760
micro				0.871	0.627	0.729

Person Name & Occupation
Only

label	FN	FP	TP	precision	recall	F ₁
Omission	1840	386	2192	0.850	0.544	0.663
Stereotype	369	89	1232	0.933	0.770	0.843
macro				0.892	0.657	0.753
micro				0.878	0.608	0.718

All labels

label	FN	FP	TP	precision	recall	F ₁
Omission	1717	464	2315	0.833	0.574	0.680
Stereotype	399	93	1202	0.928	0.751	0.830
macro				0.881	0.662	0.755
micro				0.863	0.624	0.725

Evaluation

No additional features

labels	algorithm	FN	FP	TP	precision	recall	F ₁
Omission	LR	409	61	395	0.866	0.491	0.627
Omission	RF	799	1	5	0.833	0.006	0.012
Omission	SVM	362	79	442	0.848	0.550	0.667
Stereotype	LR	124	6	191	0.970	0.606	0.746
Stereotype	RF	315	0	0	0.000	0.000	0.000
Stereotype	SVM	95	17	220	0.928	0.698	0.797

Manual annotation

	between annotators			annotators vs. aggregated		
label	precision	recall	F ₁	precision	recall	F ₁
Omission	0.531	0.409	0.439	0.997	0.641	0.767
Stereotype	0.464	0.447	0.440	0.995	0.705	0.823

Best model cascade: with
Linguistic labels

label	FN	FP	TP	precision	recall	F ₁
Omission	1714	442	2318	0.840	0.575	0.683
Stereotype	389	80	1212	0.938	0.757	0.838
macro				0.889	0.666	0.760
micro				0.871	0.627	0.729