Det Informationsvidenskabelige Akademi

What to Read Next? The Value of Social Metadata for Book Search

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IVA research talk
April 10, 2013

Outline

- Introduction
- Types of book discovery
- Problem statement & talk focus
- Methodology
- Results & analysis
- Discussion & conclusions

Books are not dead (they aren't even sick!)

- Books remain very popular!
  - No. of books sold: **2.57 billion books** in US in 2010 (up by 4.1% from 2008)
  - Sales revenue: **$13.9 billion** in US in 2010 (up by 5.8% from 2008)
    - Sales revenue: **up by 11.8%** in US from Q1 2011 to Q1 2012
      - E-books top-selling category for the first time, at the expense of paperback sales
    - > **3 million** new books published in the US in 2011
- So there is definitely a need for **discovering** (new) interesting books!

Types of book discovery

- **Search** (“*Show me all books about X*”)

BIBLIOTEKDK
ALLE BIBLIOTEKER PÅ NETTET

Spørg Biblioteksvagten | Find bibliotek

Søg

Alle materialer | Bøger | Artikler | Film | E-materialer | Spil | Musik

+ Flere søgemuligheder

Link til den "gamle" version af bibliotek.dk

bibliotek.dk (classic)

English interface under construction

Vil du være med i bibliotek.dk's brugerpanel?

Tilmeld dig her

Spørg Biblioteksv

Du kan kontakte en bibliotekar hvis du har brug for personlig service.

Spørg Biblioteksvagten

Velkommen til et nyt bibliotek.dk

bibliotek.dk har fået et nyt design.
Alt det der ligger bag grænsefladen er skrevet om.
Dette er en beta-version - dvs. alt er absolut ikke på plads endnu, men du kan få et indtryk af hvordan det ny bibliotek.dk fungerer.

Sådan søger du

Søgemulighederne udvides med facetter: Når du ser et søgeresultatet, så klik på mulighederne til venstre for at afgrænse.

Types of book discovery

- **Search** (“*Show me all books about X*”)

- **Recommendation** (“*Show me interesting books!*”)

Your Amazon.co.uk › Recommended for you

(If you're not Toine Bogers, click here.)

These recommendations are based on items you own and more.

view: **All** | New Releases | Coming Soon

Just For Today

Browse Recommended

Recommendations

Baby
Books
Books on Kindle
Car & Motorbike
Clothing
Computers & Accessories
DIY & Tools
Electronics
Film & TV
Garden & Outdoors
Grocery
Health & Beauty
Home & Garden
Jewellery
Large Appliances
Lighting
MP3 Downloads
Music
Musical Instruments
PC & Video Games

1.

Artemis Fowl and the Last Guardian, 8
by Eoin Colfer (10 July 2012)
Average Customer Review: ★★★★½ (63)
In stock

RRP: ~~£12.99~~
Price: £5.86
46 used & new from £4.25

Add to Basket | Add to Wish List

I own it | Not interested | Rate this item

Recommended because you said you owned **Artemis Fowl and the Time Paradox** and more (Fix this)

2.

Haven - Season 1 [DVD]
(30 Jan 2012)
Average Customer Review: ★★★★☆ (23)
In stock

Price: £21.00
29 used & new from £12.05

Add to Basket | Add to Wish List

I own it | Not interested | Rate this item

Recommended because you purchased **A Town Called Eureka - Season 1 - Complete [DVD]** and more (Fix this)

3.

The Artemis Fowl Files
by Eoin Colfer (25 Sep 2004)

Types of book discovery

- **Search** (“*Show me all books about X*”)

- **Recommendation** (“*Show me interesting books!*”)
  - 64% of library patrons are interested in personalized recommendations!

Types of book discovery

- **Search** (“*Show me all books about X*”)

- **Focused recommendation** (“*Show me interesting books about X!*”)

- **Recommendation** (“*Show me interesting books!*”)

LibraryThing
All topics
Hot topics

Your world
Groups and posts

Book recommendations for Victorian/Edwardian era servants?

18th-19th Century Britain

5 messages | ★ Star this topic | ✕ Ignore topic | Jump to first unread (5 unread)

Group: 18th-19th Century Britain

424 members
238 messages
You are not a member of

So with my recent addiction to Downton Abbey I've been interested in finding some first hand accounts and memoirs of people who were in service. I've found a handful that look interesting or Amazon but mostly I've found Downton Abbey tie-ins or those cheap bodice ripper romances.

Anyone out there found something good in this vein?

Reply | More

Post
Post a new topic

More options »

2 Booksloth — Edited: Jan 15, 7:51am

I'm sorry I can't help much with memoirs. I know there are a few around but the problem with these is that a large proportion of Victorian/Edwardian servants were illiterate and, anyway, simply didn't have the time to write memoirs or keep diaries. One second-hand account I have heard of but not yet read (though I plan to, 'cos it looks great) is The Cook's Tale: Life Below Stairs as it Really Was, as told to Tom Quinn*.

There are, however, lots of excellent books on the subject written by some very good historians that make fascinating reading. I hope something in this list of my favourites will appeal:

Not specifically about the Victorians/Edwardians but a general history of life within the home, and well worth reading are Bill Bryson's At Home and Lucy Worsley's If Walls Could Talk.

More specific are The Victorian Home from the Shire Library collection; Up and Down Stairs: the History of the Country House Servant by Jeremy Musson; Female Occupations: Women's Employment From 1840 - 1950 by Margaret Ward; The Edwardian Country House by Juliet Gardiner; They Worked All Their Lives by Carl Chinn; Victorian Women by Joan Perkin; The Victorian House by Judith Flanders; A Victorian Household: based on the diaries of Marion Sambourne. The Impossible Life of Mary Benson is one I haven't read yet but it looks wonderful,

Touchstones

Works

At Home by Bill Bryson

If Walls Could Talk by Juliet Blackwell

The Victorian Home (Shire Library) by Kathryn Ferry

Up and Down Stairs: The History of the Country House Servant by Jeremy Musson

Female Occupations: Women's Employment from 1840-1950 (Local Dialect) (FAMILY HISTORY) by Margaret Ward

Manor House: Life in an Edwardian Country House by Juliet Gardiner

They Worked All Their Lives: Women of the Urban

Types of book discovery

- **Search** (“*Show me all books about X*”)

- **Focused recommendation** (“*Show me interesting books about X!*”)

- **Recommendation** (“*Show me interesting books!*”)

Problem statement & talk focus

- Problem statement

  - How can we provide the best possible focused book recommendations?

- Research questions

So we are **not** looking at full text!

1. How can we ensure recommendations are **topically relevant**?
   Which book metadata is most instrumental in finding relevant books?

2. How can we ensure recommendations are of **high quality**
   How do we incorporate taste/opinions into the recommendation process?

3. How can we best **combine** quality and topicality?

Methodology

- Topically relevant recommendations → right up the alley of a **text search engine**!

- What do we need to evaluate a book search engine?

  - Large **collection** of book records

  - Realistic book requests & information needs (= **topics**)

  - **Relevance judgments** (“*Which books are relevant for which topics?*”)

    - Need to alleviate some of the problems of system-based evaluation!

  - Realistic **evaluation metric**

Methodology: Collection of book records

- Amazon/LibraryThing collection

  - Part of the 2011-2013 **INEX Social Book Search track**

  - **2.8 million** book metadata records

    - Mix of metadata from Amazon and Librarything
    - Controlled metadata from Library of Congress (LoC) and British Library (BL)
    - ISBNs are used as document ID (similar editions linked to the same work)
    - Balanced mix of fiction and non-fiction

- Provides for a natural test-bed for **focused recommendation**!

Methodology: Collection of book records

Amazon + LoC + BL

- Different groups of metadata fields

Metadata
- Title *
- Publisher
- Editorial *
- Creator
- Series
- Award
- Character
- Place

Content
- Blurb *
- Epigraph
- First words
- Last words
- Quotation

Controlled metadata
- Dewey *
- Thesaurus *
- Index terms *

Reviews
- User reviews

Tags
- Tags

LibraryThing

Methodology: Topics & relevance judgments

- Realistic book requests & information needs

  - Focused book recommendations can touch upon many **different aspects**

    - Users search for topics, genres, authors, plots, etc.
    - Users want books that are engaging, funny, well-written, educational, etc.
    - Users have different preferences, knowledge, reading level, etc.

- LibraryThing fora contain many such focused requests!

Topic title

Politics of Multiculturalism Recommendations?

Group name

Political Philosophy

13 messages | ★ Star this topic | unread (13 unread)

Narrative

1 steve.clason — Sep 26, 2010, 11:32pm

I'm new, and would appreciate any recommended reading on the politics of multiculturalism. Parekh's Rethinking Multiculturalism: Cultural Diversity and Political Theory (which I just finished) in the end left me unconvinced, though I did find much of value I thought he depended way too much on being able to talk out the details later. It may be that I found his writing style really irritating so adopted a defiant skepticism, but still...

Anyway, I've read Sen, Rawls, Habermas, and Nussbaum, still don't feel like I've wrapped my little brain around the issue very well and would appreciate any suggestions for further anyone might offer.

Reply | More

2 rsterling — Edited: Sep 27, 2010, 1:31am

Will Kymlicka's Multicultural Citizenship is one of the key works within this literature, and his later work has built on but also modified his argument there. See his author page here. I think his latest ones are Multicultural Odysseys and Politics in the Vernacular.

Other suggestions depend a little on what topics interest you about/within multiculturalism and what theoretical/philosophical approaches you prefer. Here are a few general suggestions:
Multiculturalism: Examining the Politics of Recognition with an essay by Charles Taylor and responses from other authors (ed. Amy Gutmann)
Is Multiculturalism Bad for Womauthoen by Susan Moller Okin (1999?)
Culture and Equality: an egalitarian critique of multiculturalism by Brian Barry (2001)
The Claims of Culture by Seyla Benhabib (2002)
Multiculturalism without Culture by Anne Phillips (2007)
I could add a few more, but those would be a good start.

There's also a recent-ish anthology called Multiculturalism and Political Theory that looks good and

LibraryThing
All topics
Hot topics

Your groups
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Post a new topic

More options »

Group: Political Philosophy

259 members

92 messages

You are not a member of this group.

About

This topic is not marked as primarily about any work, author or other topic.

Add...

Touchstones

Works

Rethinking Multiculturalism: Cultural Diversity and Political Theory by Bhikhu Parekh

Multicultural Citizenship by Will Kymlikca

Multicultural Odysseys by Will Kymlikca

Politics in the Vernacular by Will Kymlikca

Multiculturalism: Examining the politics of recognition by Charles Taylor

Is Multiculturalism Bad for Women? by Susan Moller Okin

Culture and Equality: An Egalitarian Critique of Multiculturalism by Brian

Methodology: Topics & relevance judgments

- Realistic book requests & information needs

  - Focused book recommendations can touch upon many **different aspects**

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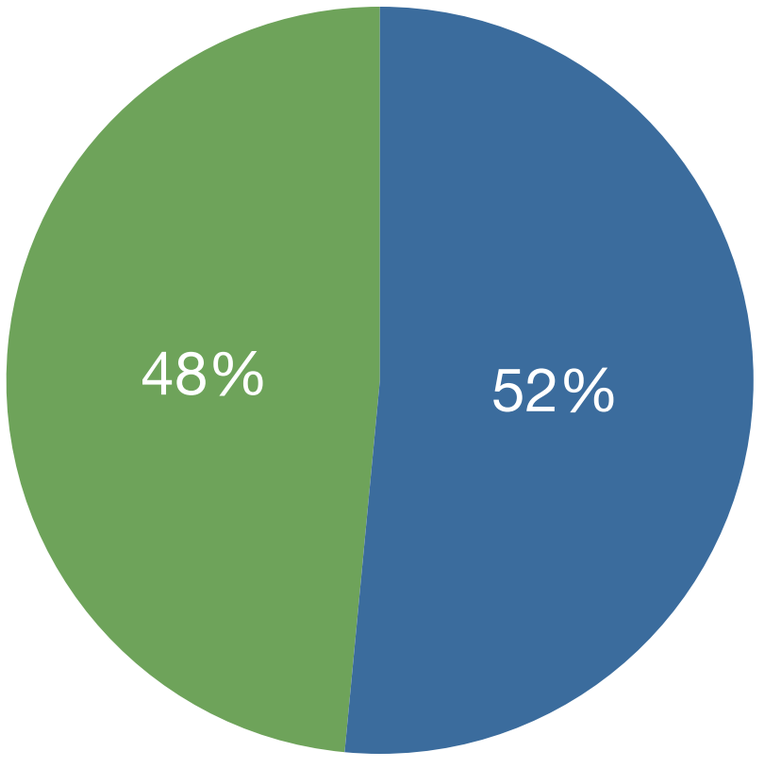
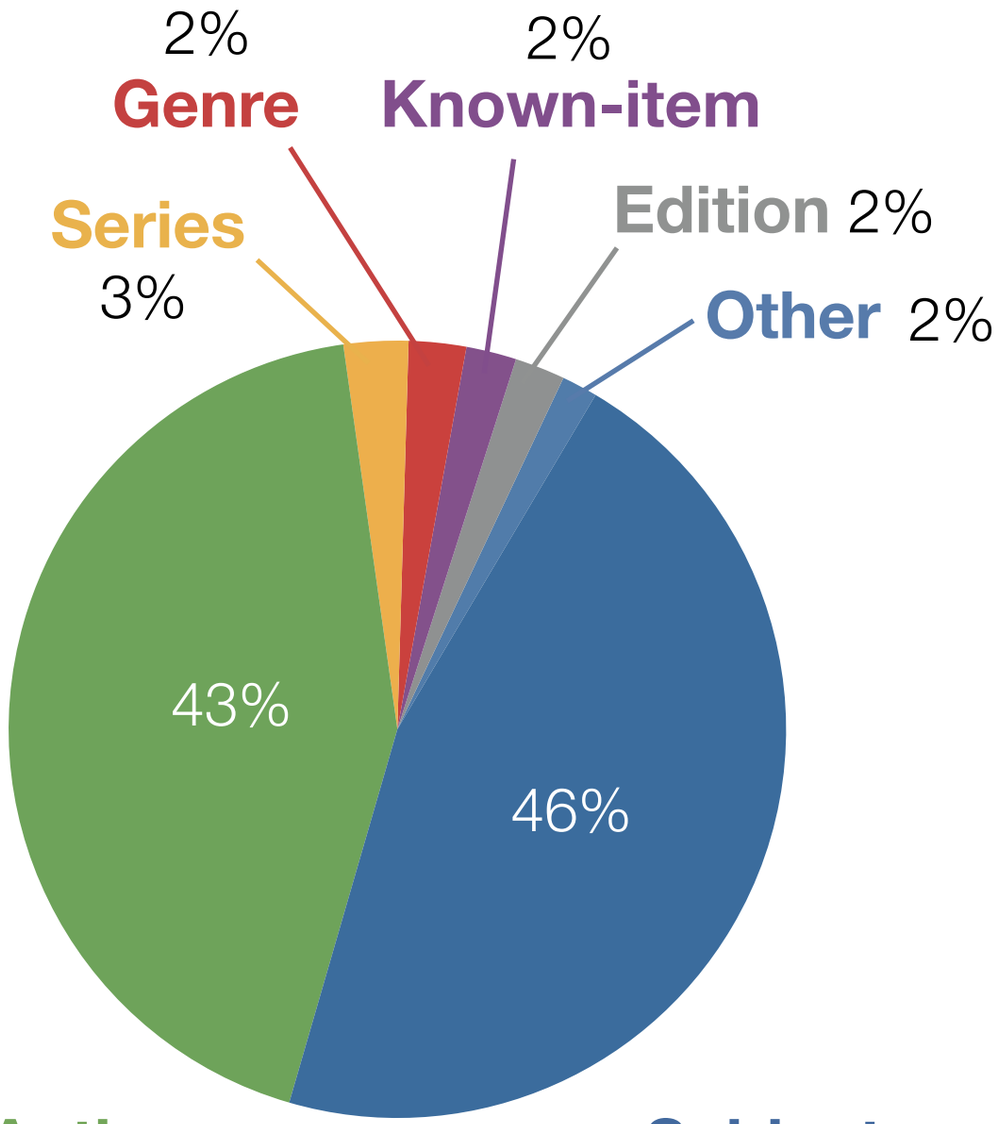
- LibraryThing fora contain many of such focused requests!

- Collected **211 different topics** from the LibraryThing fora, annotated with

  - **Type** (fiction vs. non-fiction)
  - **Subject** (same author, subject, series, genre, known item, edition)

Methodology: Topics





Methodology: Relevance judgments

- Problem: relevance often judged by students or retired CIA analysts
- Solution: take recommendations from LT members

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Recommended books

There's also a recent-ish anthology called Multiculturalism and Political Theory that looks good and has chapters from several of the main scholars in this area. That would probably be a good way to

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Methodology: Relevance judgments

- Problem: relevance often judged by students or retired CIA analysts

- Solution: take recommendations from LT members

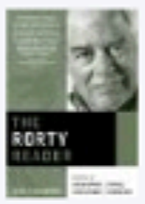
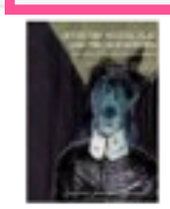
  - Provided by people **interested** in the topic,

  - **Free** of charge,

  - Judged both on **topical relevance** and **quality**!

- Graded relevance scoring

  - Relevance score of **1** if suggested by other LT members

	Politics in the Vernacular: Nationalism, Multiculturalism, and Citizenship	Will Kymlicka	2001	democracy, political theory, immigration, multiculturalism	★★★☆☆	Oct 25, 2010	24 / 1
	Territory, Authority, Rights: From Medieval to Global Assemblages	Saskia Sassen	2008	democracy, immigration, political theory	☆☆☆☆☆	Oct 25, 2010	80 / 0
	Parallel Play: Growing Up with Undiagnosed Asperger's	Tim Page	2009		★★★★☆	Oct 23, 2010	106 / 8
	The Rorty Reader (Blackwell Reade				★★★★☆	Oct 21, 2010	11 / 1
	Foundations and Frontiers of Deliberative Governance	John S. Dryzek	no date	democracy, political theory, deliberative democracy	☆☆☆☆☆	Oct 21, 2010	3 / 0
	Rethinking Multiculturalism: Cultural Diversity and Political Theory	Bhikhu Parekh	2002	political theory, immigration, multiculturalism	★★☆☆☆	Sep 1, 2010	48 / 1
	After the Postsecular and the Postmodern: New Essays in Continental Philosophy of Religion	Anthony Paul Smith	2010	philosophy, postmodern, continental philosophy	☆☆☆☆☆	Aug 23, 2010	5 / 0

Forums suggestions added **after** the topic was posted

Methodology: Relevance judgments

- Problem: relevance often judged by students or retired CIA analysts

- Solution: take recommendations from LT members

  - Provided by people **interested** in the topic,

  - **Free** of charge,

  - Judged both on **topical relevance** and **quality**!

- Graded relevance scoring

  - Relevance score of **1** if suggested by **other** LT members

  - Relevance score of **4** if added by the topic creator **after** posting the request

Methodology: Evaluation

- Main metric: **Normalized Discounted Cumulated Gain** (NDCG)

  - Measures the **usefulness** (gain) of a book in the ranked results list

    - Scores range between 0.0 and 1.0

  - Book **ranking matters** (as opposed to regular Precision)

    - Relevant books before non-relevant books

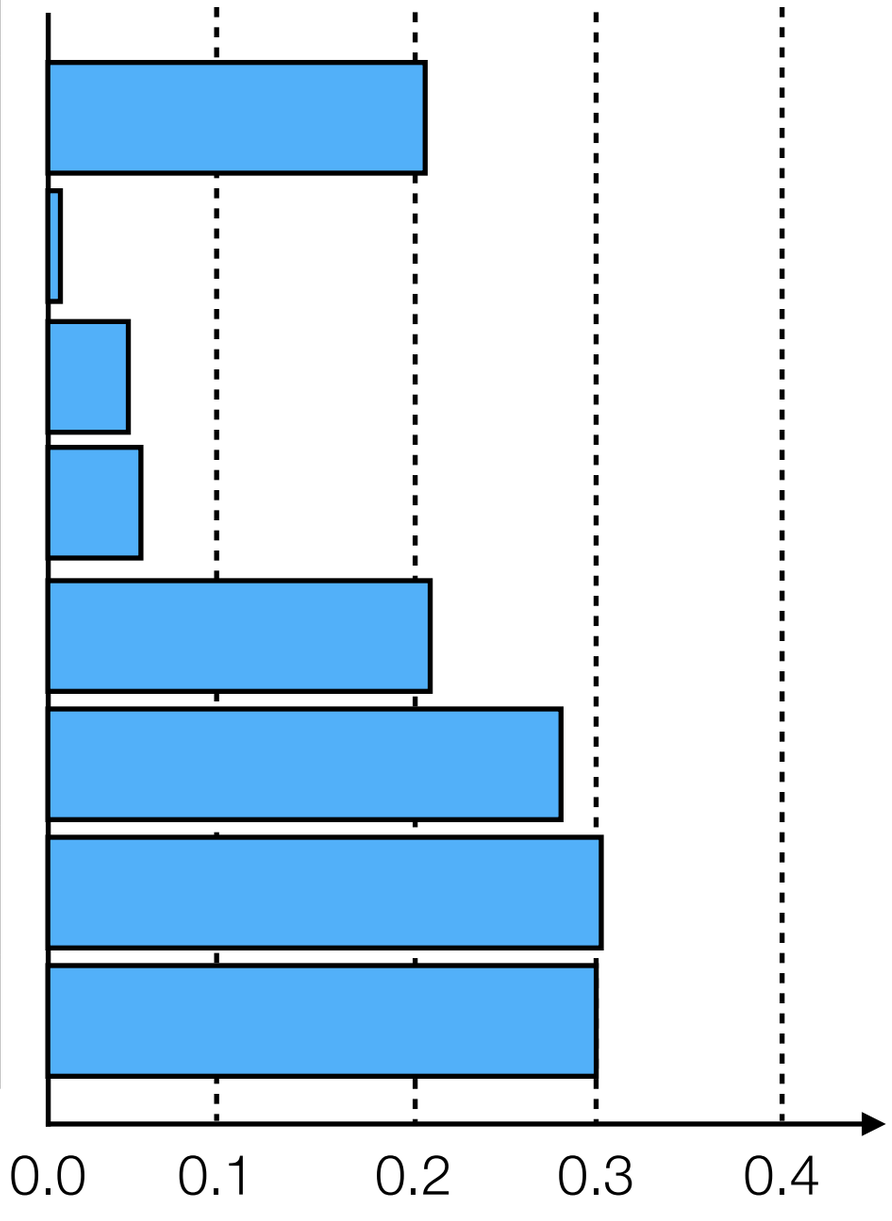
  - Takes **graded relevance** judgments into account

    - Highly relevant books before slightly relevant books, etc.

  - Evaluated on **NDCG@10** (over the first 10 results)

Results

Set of metadata fields	**NDCG@10**
Metadata	0.2015
Content	0.0115
Controlled metadata	0.0496
Controlled metadata (+LoC, +BL)	0.0691
Tags	0.2056
Reviews	0.2832
All fields	0.3058
All fields (+LoC, +BL)	0.3029



Results: Does controlled metadata help?

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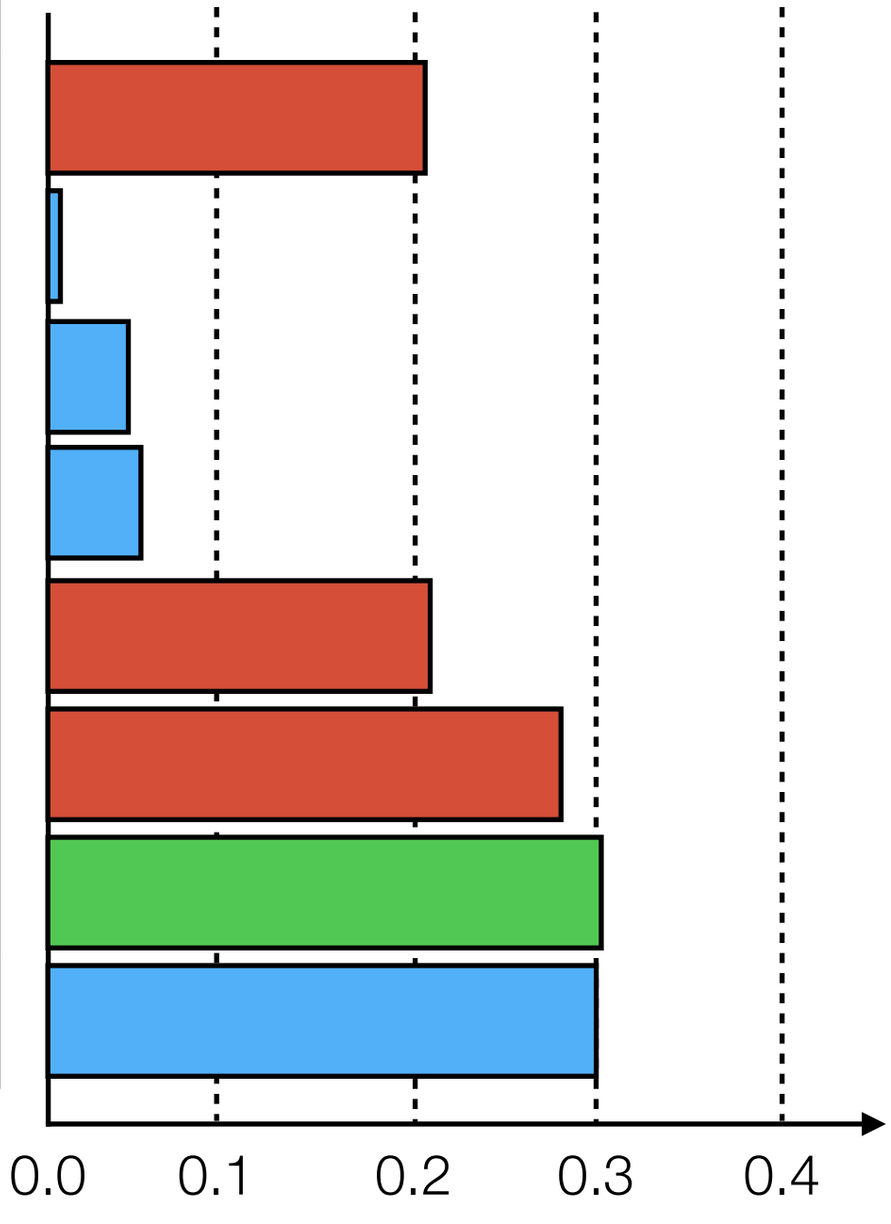

Results: Tags vs. controlled metadata

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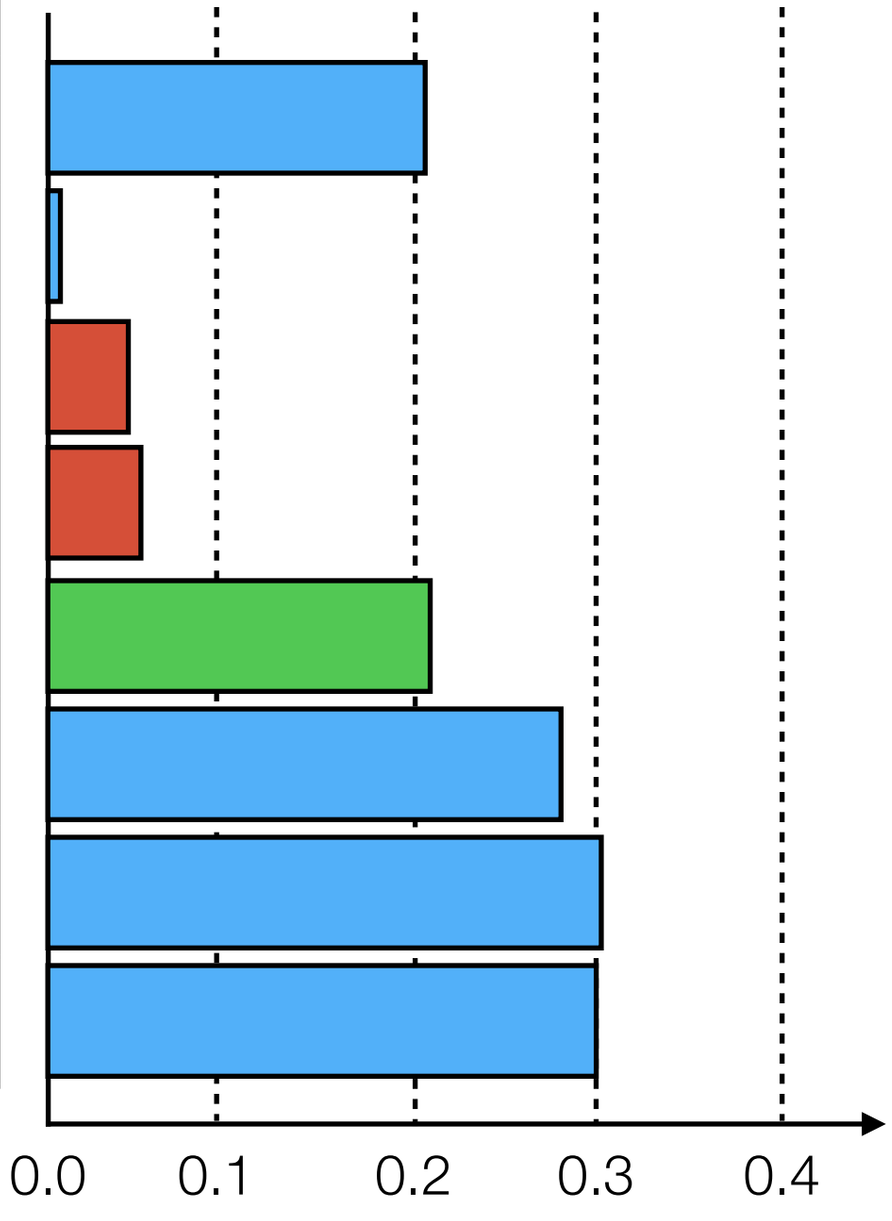

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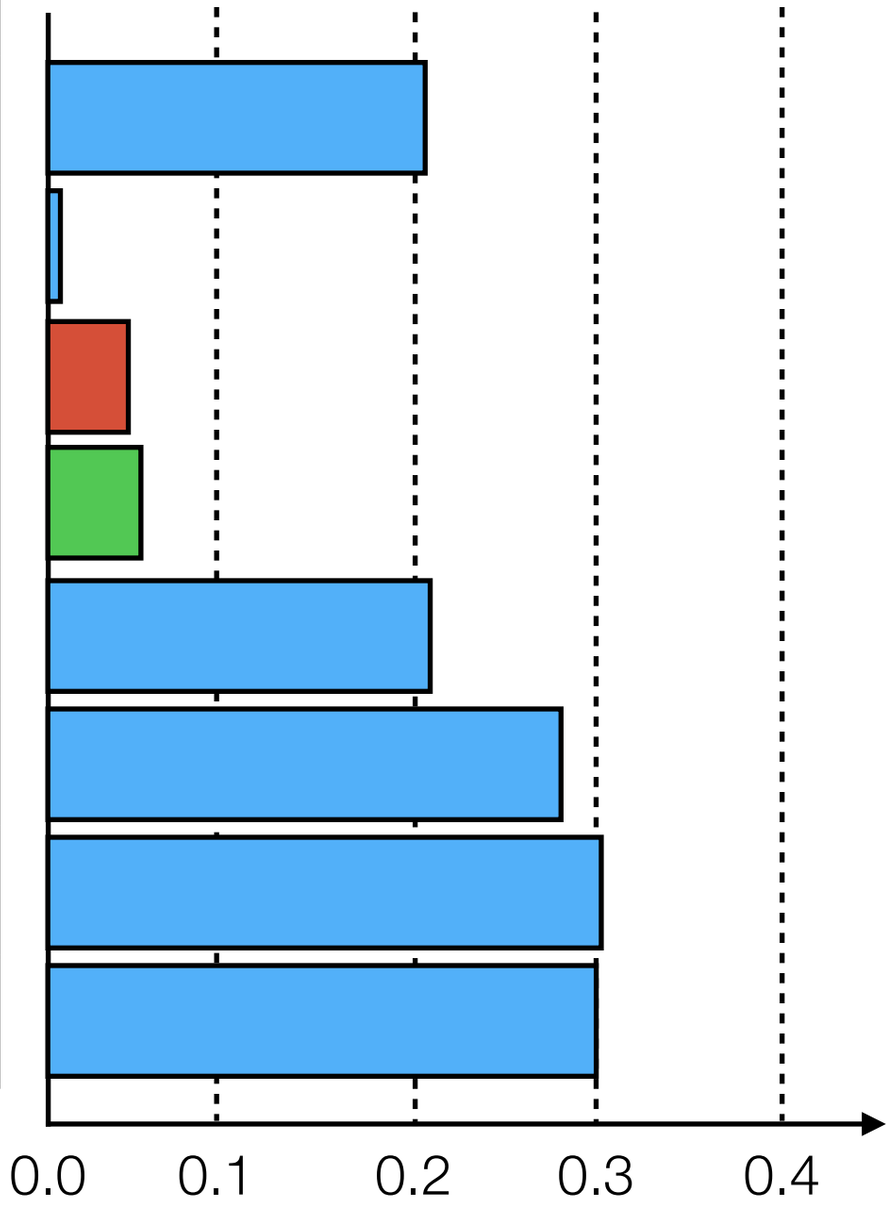

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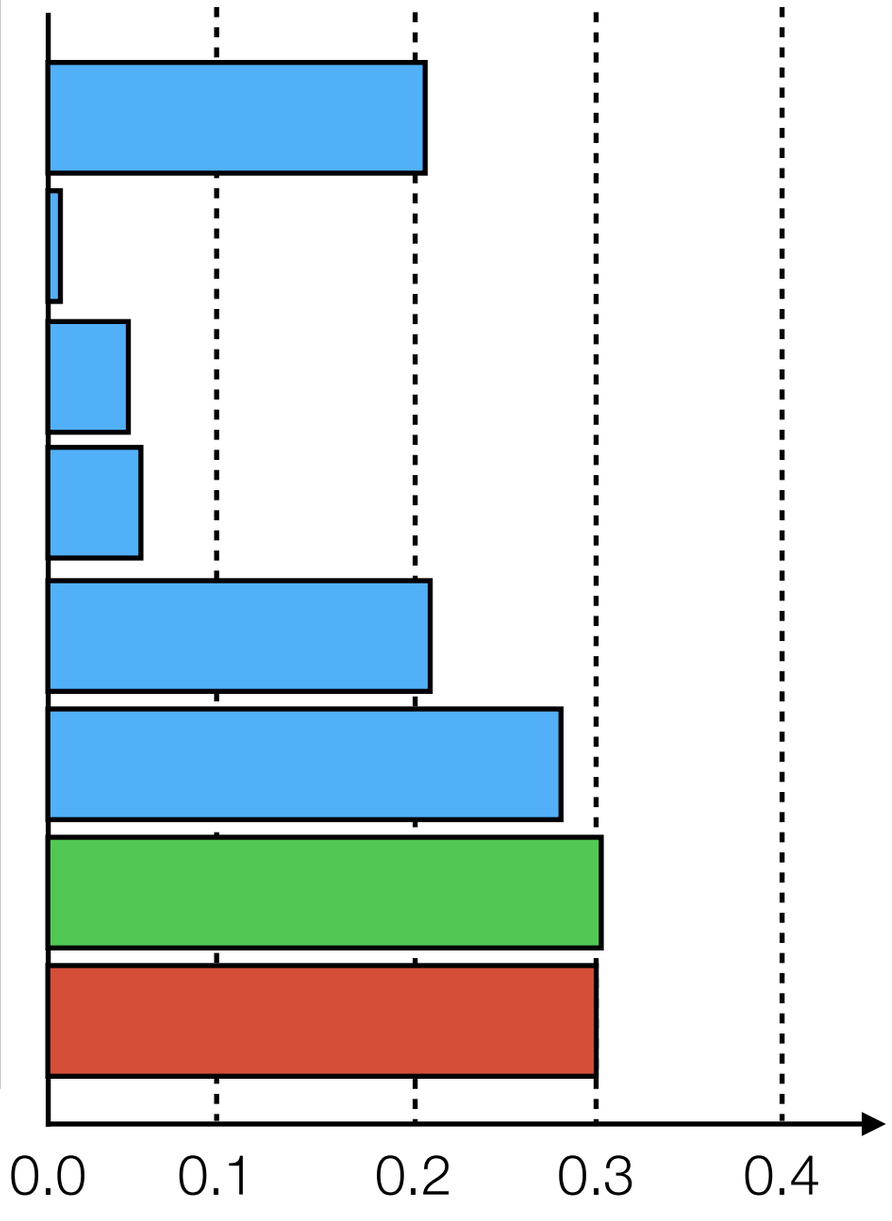
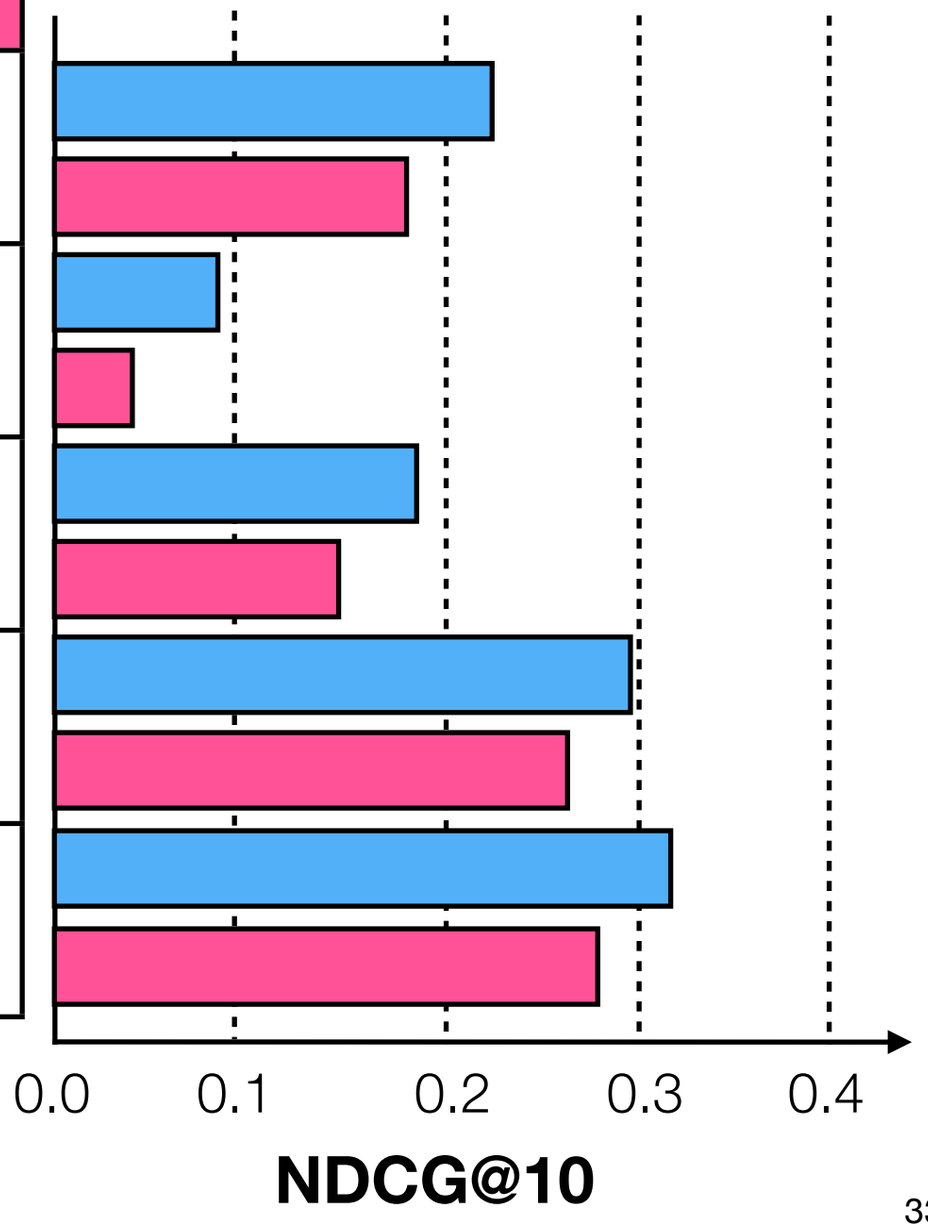


Results: Fiction vs. non-fiction

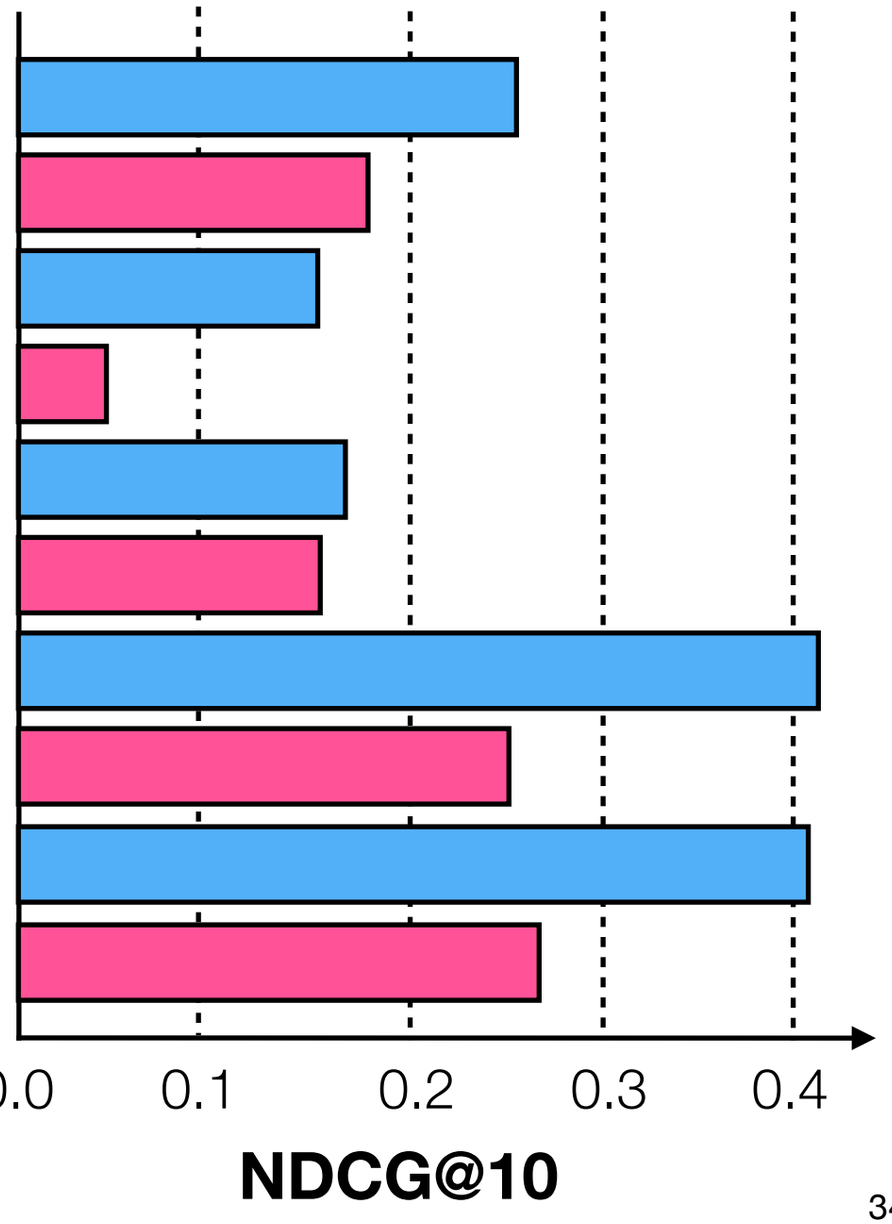
Metadata fields	Fiction	Non-fiction
Metadata	0.2297	0.1798
Controlled metadata	0.0998	0.0461
Tags	0.1804	0.1576
Reviews	0.2975	0.2671
All fields	0.3228	0.2806



Note: ‘Content’ left out, ‘Controlled metadata’ and ‘All fields’ is w/ LoC and BD metadata

Results: Author vs. subject

Metadata fields	Author	Subject
Metadata	0.2600	0.1795
Controlled metadata	0.1628	0.0529
Tags	0.1738	0.1629
Reviews	0.4170	0.2499
All fields	0.4095	0.2697



Note: ‘Content’ left out, ‘Controlled metadata’ and ‘All fields’ is w/ LoC and BD metadata

Results: Author vs. subject

Metadata fields	Author	Subject
Metadata	0.2600	0.1795
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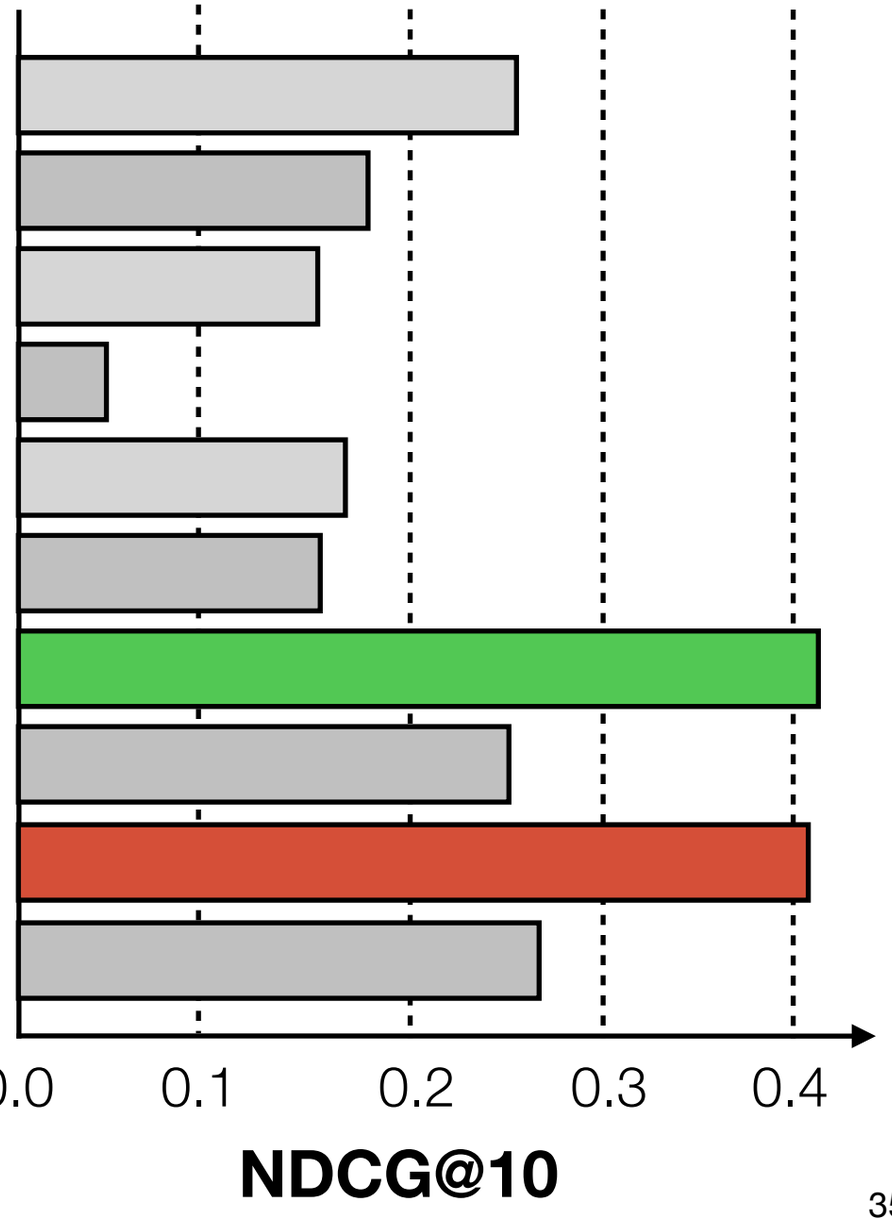
Tags	0.1738	0.1629
Reviews	**0.4170**	0.2499
All fields	**0.4095**	0.2697



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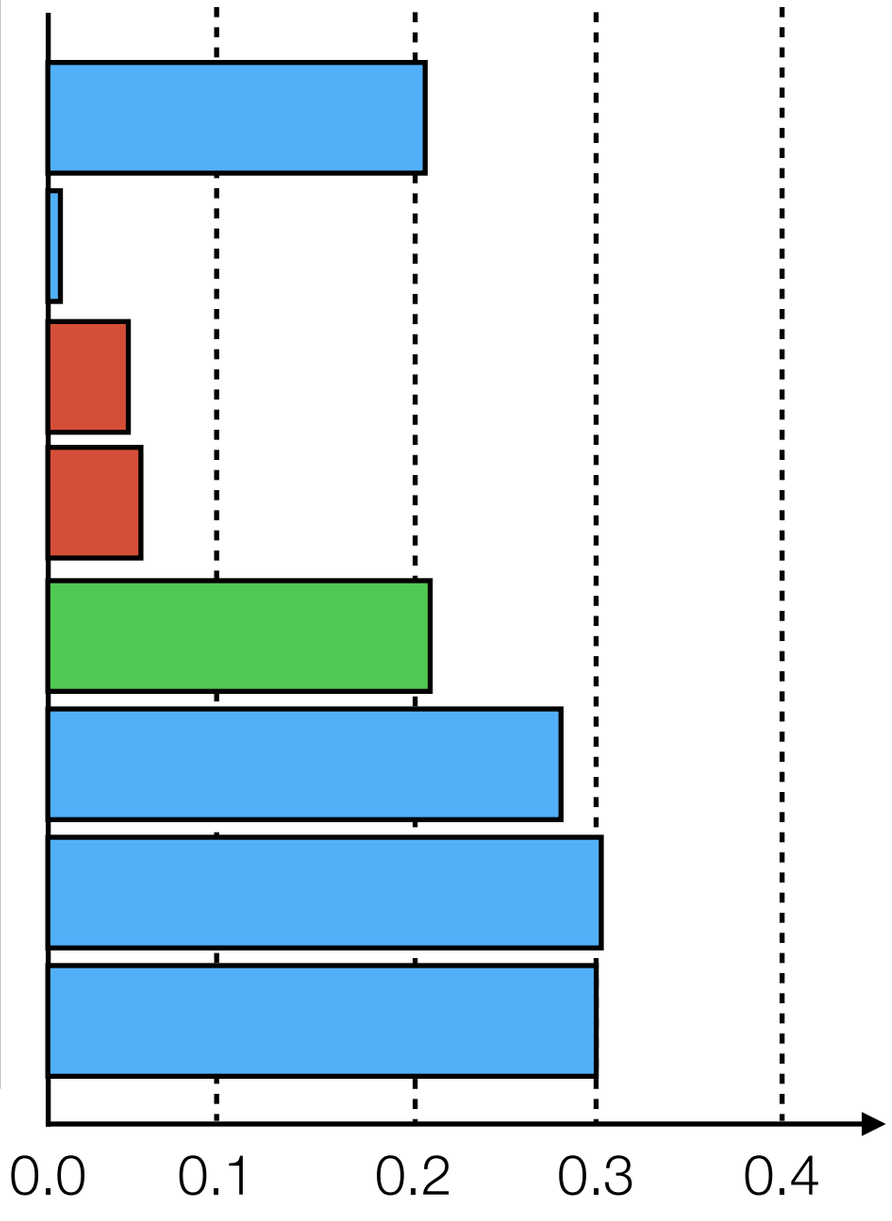
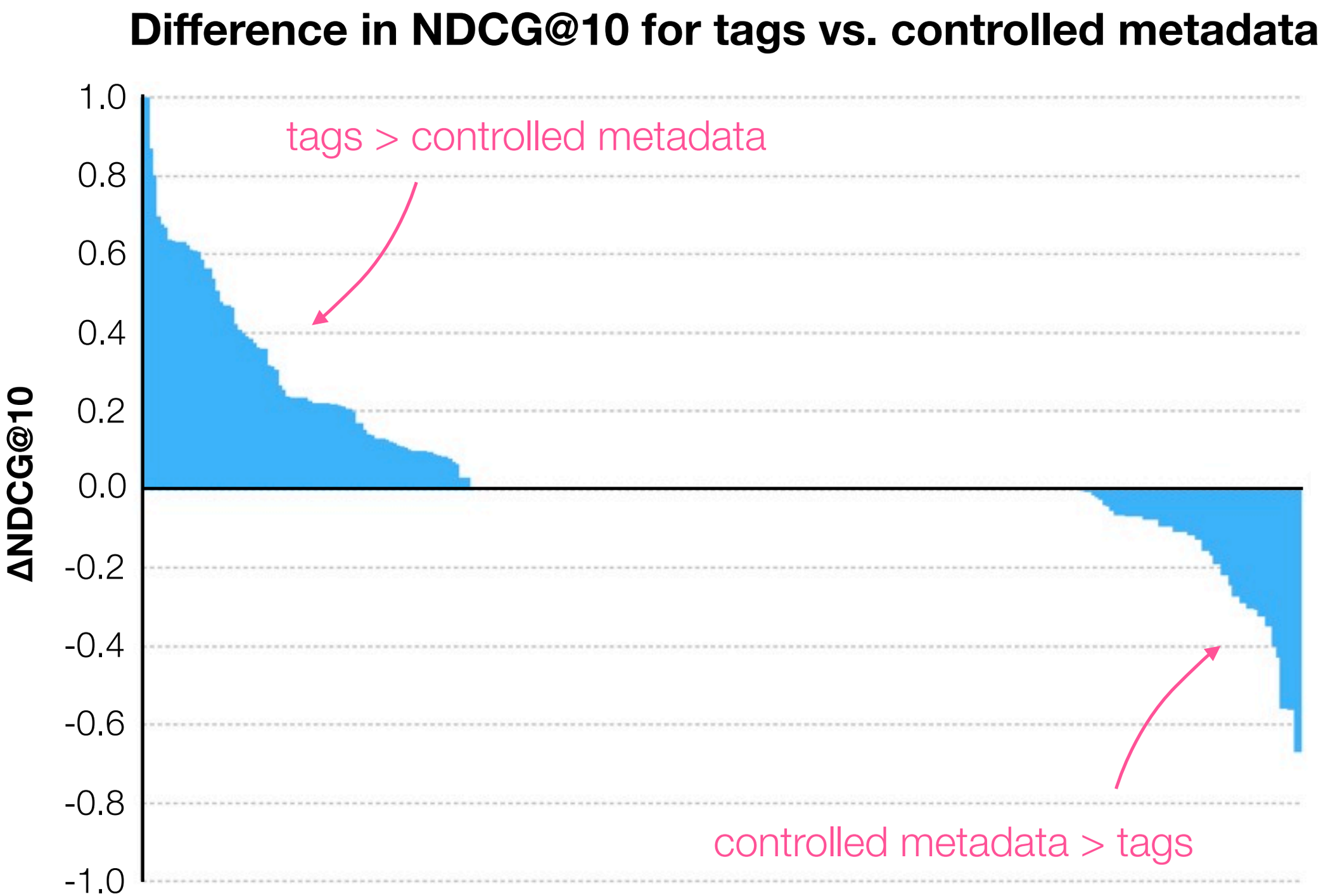


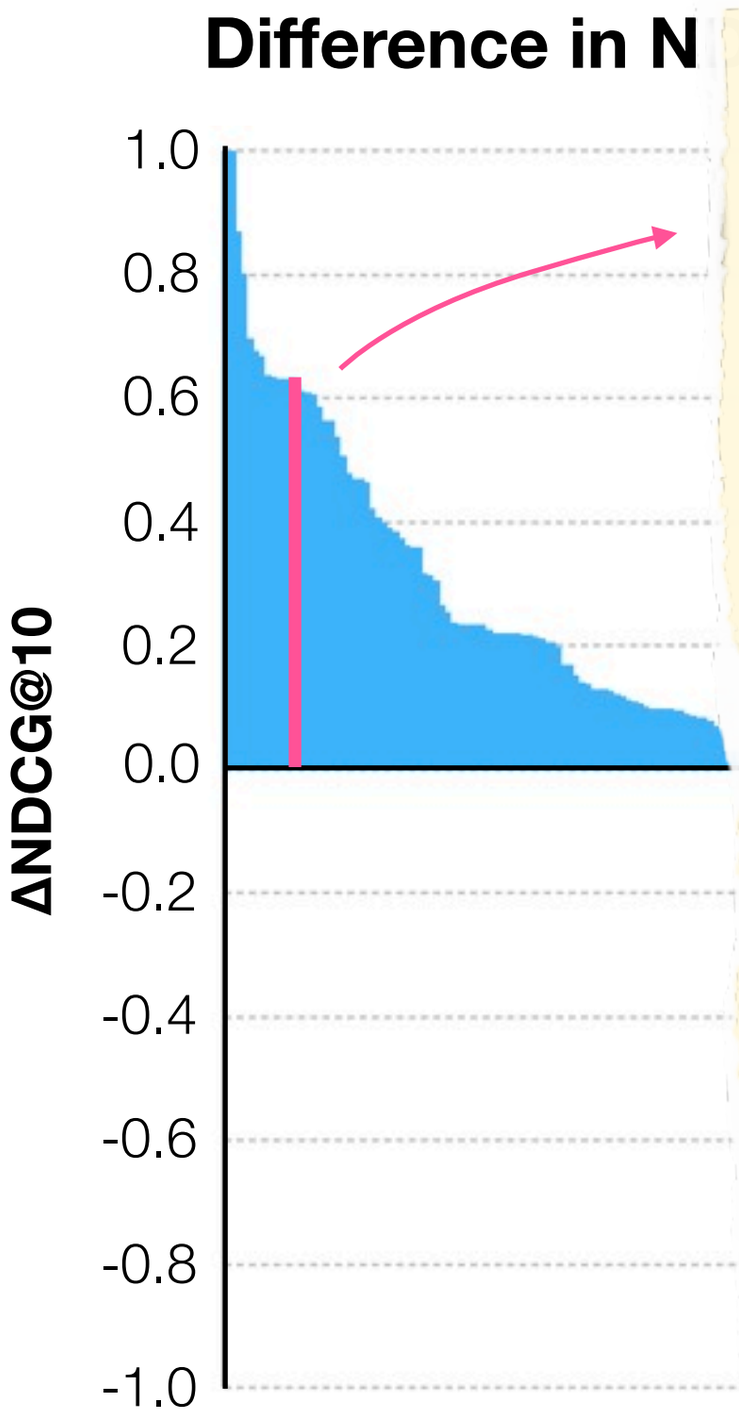
Analysis: Tags vs. controlled metadata

- Single scores do not say everything! What is actually going on?
  - Small improvements from tags on all topics?
  - Big improvements from tags on some topics?
  - Does controlled metadata even help for any topics?

Analysis: Tags vs. controlled metadata



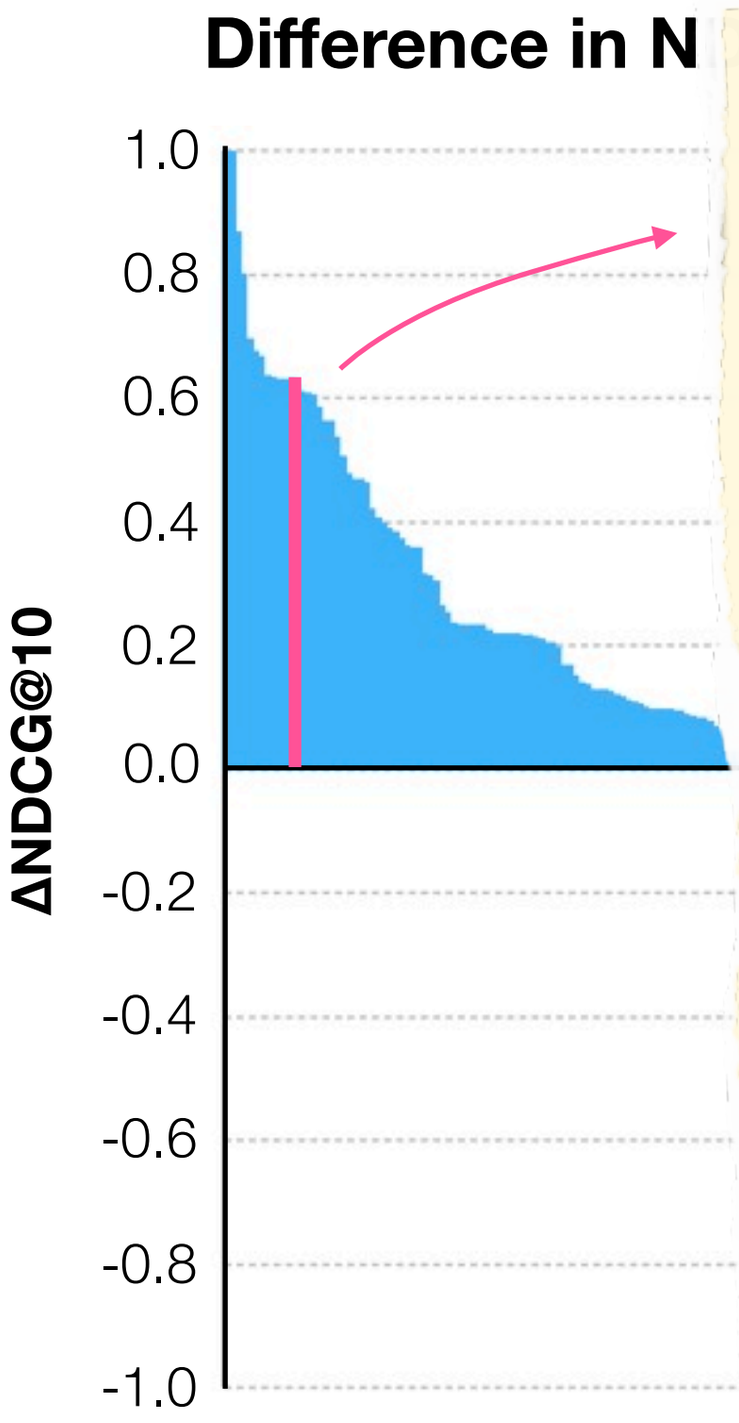
Analysis: Tags vs. controlled metadata



Topic 34544 Controlled metadata

Has anyone got any recommendations on books from or about Heian Period Japan? I'm especially interested in poetic diaries but also general history of the time, poetry or even fiction set in that time. I have already read The Pillow Book by Sei Shonagon and The Gossamer Years. I'm also in the middle of reading The diary of Murasaki and As I crossed a bridge of dreams. Are there any obscure classics I'm missing?

Analysis: Tags vs. controlled metadata



Tags

Topic 34544

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Analysis: Tags vs. controlled metadata

Topic 98959

Controlled metadata

I've been reading Lovecraft's essay Supernatural Horror in Literature, and after seeing his praise of Mary Shelley's Frankenstein as an unrivaled high point of post-Gothic horror, I've found my interest piqued and I'm interested in picking up a copy of my own! The only problem is, there are so many editions! If I've read the book from cover to cover at all, it's been ages. I'd like to get the best experience, and with October looming the idea of picking it up in anthology form has crossed my mind. (Already planning to order a copy of Three Vampire Tales for the occasion.) Any recommendations?

olled metadata

Analysis: Tags vs. controlled metadata

Topic 98959

Tags

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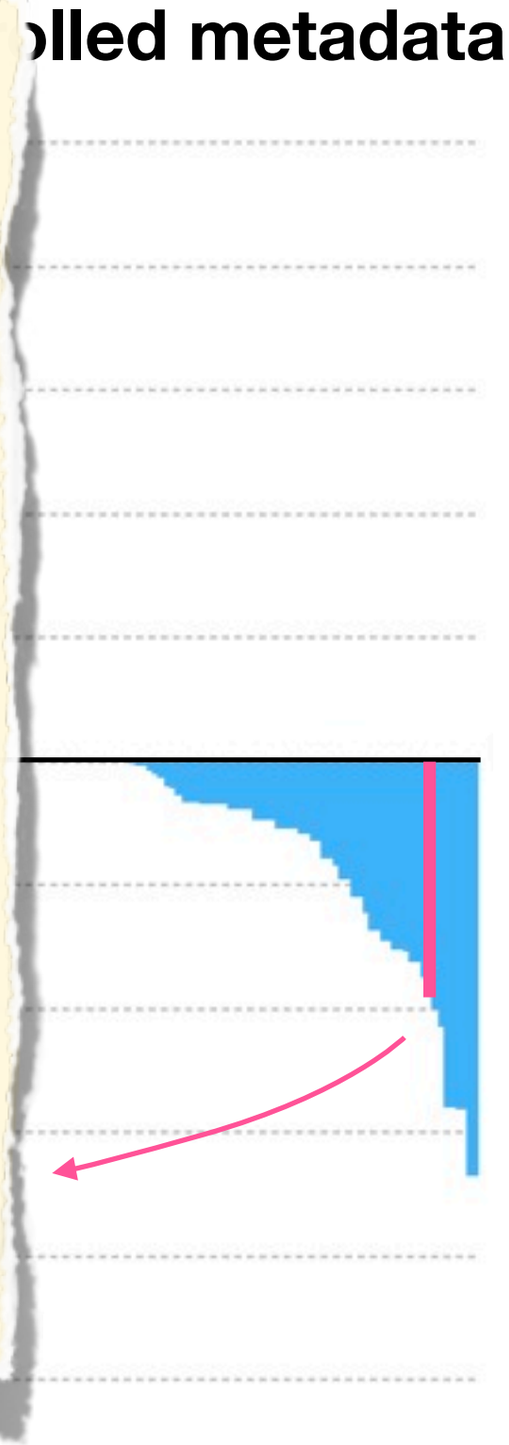

Analysis: Tags vs. controlled metadata

- More tags assigned to a book on average
  - **87.6** tags on average per book
  - **6.3** dewey/subject-heading terms on average per book
- More **unique** tags assigned to a book on average
  - **13.8** unique tags on average per book
  - **5.6** unique dewey/subject-heading terms on average per book
- Coverage of tags is only slightly better
  - Tags for **82.9%** of all books vs. **78.5%** controlled vocabulary terms
- Tags match the end user's vocabulary better!

Discussion

- Best performance using **poly-representative approach**
  - All metadata fields combined works best
  - Reviews single-best performing metadata field

- Controlled metadata is **not helpful** for book search!
  - Tags outperform controlled metadata
    - Partially due to larger volume of tags and better match with end-user vocabulary
  - Removing controlled metadata **does not even hurt performance**!
    - Even without using the full text!
  - Not the first time either: controlled metadata was **equally underwhelming for Web search** (Hawking & Zobel, 2007)

Discussion

- **Why do we bother with indexing books?!**
  - Indexing for retrieval seems to be a waste of time and money!
  - But this is typically mentioned as the main reason for indexing! (Large & Hartley, 1999)
  - Not true anymore in the age of user-generated content!
    - Except for domains where this is hard to do of course!

- Does that mean we need to re-think **why & how we index**?
  - **Browsing (physical) collections** might be the best alternative reason
  - Means we need to re-think how we index!
  - Means we need to re-think digital library interfaces!

Questions? Comments? Suggestions?

References

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  - 2008-2010 sales figures taken from: BookStats (2011), *New Publishing Industry Survey Details Strong Three-Year Growth in Net Revenue, Units*, available at http://www.publishers.org/press/44/, located April 4, 2013
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  - Screenshot taken from Bibliotek.dk BETA, available at http://bibliotek.dk/beta, located April 3, 2013

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  - Screenshot taken from LibraryThing, available at http://www.librarything.com/topic/148371, located April 3, 2013
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- Slide 24
  - Screenshot taken from LibraryThing, available at http://www.librarything.com/catalog/steve.clason/allcollections, located April 8, 2013
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  - Usefulness of metadata for web search taken from: Hawking, D. and Zobel, J. (2007). Does Topic Metadata Help with Web Search? *Journal of the American Society for Information Science and Technology*, vol. 58, nr. 5, pp. 613-628
- Slide 48
  - Retrieval as the main reason for indexing: Large, T.A. and Hartley, R.J. (1999). *Information Seeking in the Online Age: Principles and Practice*. London: Bowker-Saur

Backup slides

Coverage

Metadata field	Coverage (%)
Thesaurus	99.9%
Title	99.9%
Publisher	99.4%
Creator	96.6%
Tag	82.9%
Controlled vocabulary	78.5%
Dewey	*61.0%*
Subject	*56.6%*
Place	*4.0%*
Editorial	57.9%

Metadata field	Coverage (%)
Review	46.9%
Character	5.4%
Award	5.0%
Series	3.3%
Firstwords	0.5%
Lastwords	0.4%
Epigraph	0.08%
Blurb	0.07%
Quotation	0.04%

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