

Google Books: The Metadata Mess

Google Book Settlement Conference
UC Berkeley
August 28, 2009

Geoff Nunberg, School of Information

The Last Library

"The cost of creating such a library and Google's significant lead time advantage suggest that no other entity will create a competing digital library for the foreseeable future." Directors of ALA, ACRL, ARL in letter to DOJ Antitrust Division, July 29, 2009

There is no Moore's Law for capture...

Hence the urgency of concerns about pricing, access, exclusivity, privacy...and "quality"



Whose interests determine "quality"?

Google Book Search is "a tremendous public good for students, for teachers, for scholars, for everyone." Derek Slater, Google

... but students, scholars and "everyone" may have different purposes for using GBS.



Three ways of using GBS

What "Googling" means: barrelling in sideways



GBS as a borough of Greater Google

"We just feel this is part of our core mission. There is fantastic information in books. Often when I do a search, what is in a book is miles ahead of what I find on a Web site." Sergey Brin



Three ways of using GBS

Seeking out works & editions: the "destination experience"



A particular edition of Leaves of Grass A good edition of Tristram Shandy 18th-c. French editions of Don Quixote, etc.

The importance of metadata: Who, when, where etc.

Three ways of using GBS

"Batch processing": data mining and "electronic philology"

"It's only reporters and computational linguists who care if [hit-count estimation] is really precise." Peter Norvig, Google

Text databases and the "new philologies":

The importance of language to social, intellectual, and political history & literary study

Coincides emergence of large-scale historical text databases...

When did happiness replace felicity in 17th c?

Plotting the rise & fall of propaganda

How did *liberalism* spread in the early nineteenth-century European context?.

Good enough for scholarship?

Will GBS be an adequate resource for scholarly needs... now and in the future?

Depends on:

Quality of imaging

Reliability and robustness of search tools

Quality and reliability of metadata

e.g., date, edition history, author, subject classification, etc.

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Good enough for scholarship?

Will GBS be an adequate resource for scholarly needs... now and in the future?

Depends on:

Quality of imaging

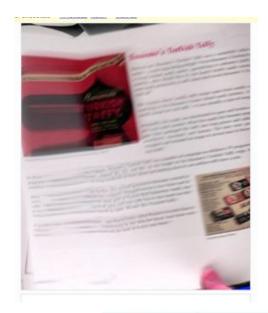
Reliability and robustness of search tools

Quality and reliability of metadata

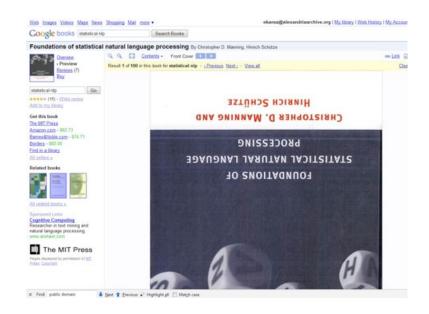
e.g., date, edition history, author, subject classification, etc.

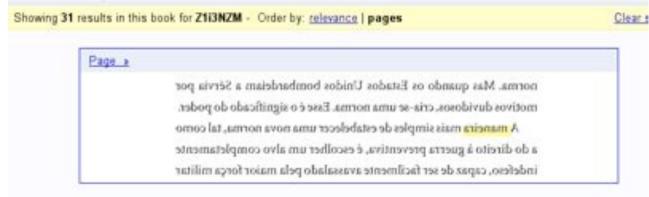
But GBS metadata are awful.

Quality Issues: Botched Scans, OCR, &c.









Metadata Issues: 1899, annus mirabilis



KILLER IN THE RAIN

by RAYMOND CHANDLER - Fiction - 1899

It was in the pulp detective magazines of the 1930s that Raymond

definitive take on the hard-boiled detective story first appeared. ... No preview available - About this book - Add to my library - More editions



CULTURE AND SOCIETY 1780-1950 - Page 206

by RAYMOND WILLIAMS - Social Science - 1899

This was the positive result of the life of the family in a small house, ... are

not separated from personal relationships; and Lawrence knew from this. ...

Limited preview - About this book - Add to my library - More editions



CONDITION HUMAINE, LA

by ANDRE MALRAUX - Fiction - 1899 - 352 pages

En mars 1927, l'armée du Kuonsintang dingée par Chang-Kaï-Shek s'approche de

Shanghai. Les communistes de la ville organisent le soulèvement des ouvriers ...

No preview available - About this book - Add to my library - More editions



Christine

by Stephen King - Figure - 1899 - 314 pages

Page 11

PRÓLOGO Esta é a história de um triângulo amoroso — suponho que este seria o

nome - formado por Amie Cunningham, Leigh Cahot e. naturalmente, Christine. ...

No preview available - About this book - Add to my library - More editions



GRAPES OF WRATH, THE: TEXT AND CRITICISM

by JOHN STEINBECK - Literary Criticism - 1899 - 806 pages

This book includes the restored text corrected by scholar Robert DeMott, a

of the Joad family's journey, Steinbeck's declaration of intent in writing ... No preview available - About this book - Add to my library - More editions



COMPLETE SHORTER FICTION OF VIRGINIA WOOLF, THE

by SUSAN DICK - Riction - 1899

This volume brings together all of Virginia Woolf's short stories and sketches. Limited preview - About this book - Add to my library - More editions



PORTABLE DOROTHY PARKER, THE

by DOROTHY PARKER, SETH - Fiction - 1899 - 640 pages

The second revision in sixty years, this sublime collection ranges

verse, stories, essays, and journalism of one of the twentieth century's most

No preview available - About this book - Add to my library - More editions



YELLOW SUBMARINE

by THE BEATLES - Juvenile Fiction - 1899 - 40

Uma aventura fascinante com a major banda de rock de todos os tempos! Era uma

vez - ou duas, talvez - um paraíso chamado Pepperland. ...

No preview available - About this book - Add to my library - More editions

Random Dates

The World According to Drucker Overview Book overview Reviews (0) Peter Drucker Is The Man Who The Economist Calls 'The Buy Biography Airs His Controversial Views On Business, Gov Future. 1905 会会会会 (0) - Write review No preview available Add to my library What Maisie knew By Henry James 1848 Overview **Book overview** Reviews (3) No preview available - 1848 Buy Letters from Virginia Woolf to Jacques and Gwen Raverat by Virginia Wool 1900 100 pages No preview available - About this book - Add to my library 1900 The bonfire of the vanities 1888 by Tom Wolfe - Fiction - 1888 - 690 pages Tom Wolfe's modern American satire tells the story of Sherman McCoy, a Wall Street "Master of the Universe" who has it all - a Park Avenue apartment, a... No preview available - About this book - Add to my library - More editions

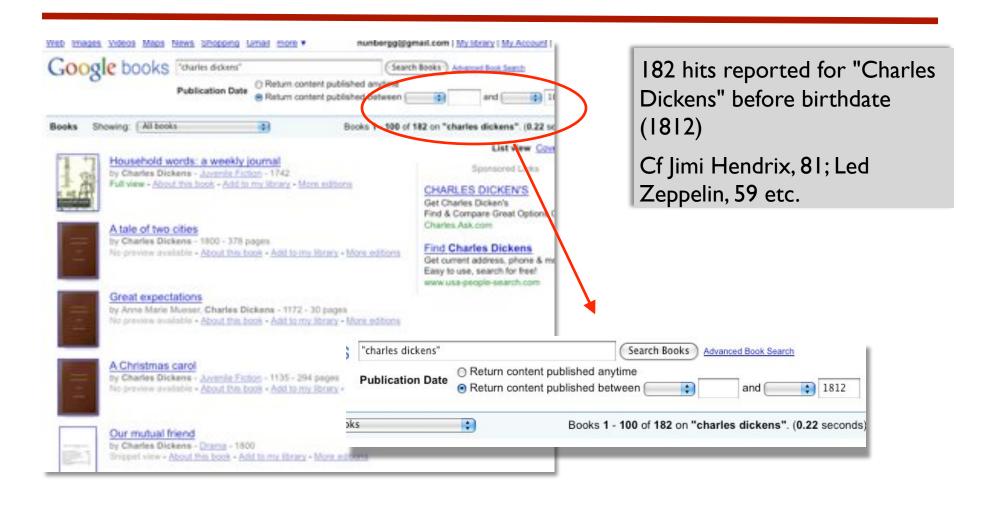


The pervasiveness of misdatings

V	Internet security by Dan Fermet, WIETSE VENEMA - Conquiers - 1899 - 800 pages Computer forensics, the art and science of gathering and analyzing digital evidence, reconstructing data and attacks, and tracking perpetrators, No preview available - About this book - About the book -	1899
=	Multicultural Teaching With The Internet by Sunii Chavan - Internet in education - 1905 - 301 pages No preview available - About this book - Add to my literary	1905
	Physics by Bafour Stewart - Education - 1876 - 149 pages Full view - About the book - Add to my Strany - More editions	1878
	Internet For Libraries And Information Centres (book + Floppy) by Jambhekar - Library Information networks - 1905 - 174 pages No preview available - About this book - Add to my library	1905
3	Emma - Page 55 Fiction - 1948 - 831 pages Die bekannteste dürfte der Informet Relay Chat (IRC) sein, Denn: Das Informet das, was seine Nutzerinnen und Nutzer daraus machen Einspeel view - About this book - Add to my führany - Mone editorig	1946
	Internet Technologies And Applications 1905 No praview available - About this book - Abd to my litrary - More editions	1905
=	Mohit Dictionary Of Internet And Web by Vincet Gupta - <u>Internet</u> - 1905 - 382 pages No preview available - <u>About the book</u> - <u>Abd to my library</u>	1905
	Project implementation and management - bridging the gap proc. 5th to 1876 - 305 pages No preview available - About this 500k - Add to my literaty.	1905
7	The Mosaic navigator. The essential guide to the internet interface by Sigmund Freud, Katherine Jones - 1939 - 218 pages Includes glosser, index. No preview available - About this book - Add to my library.	1939

527 hits returned for "Internet" before 1950

Famous before their lifetime





VIRTUAL COMMUNITY: HOMESTEADING ON THE ELECTRONIC FRONTIER

by Howard RHEINGOLD - Somputers - 1899
Limited preview - About this book - Add to my library - More editions





Do Que É Feito O Pensamento

by STEVEN PINKER - Psychology 1899 - 44 pages

Page 411

no really good ?" Além disso, como ressaltou o linguista

embora de para imaginar o diálogo How brilliant was it? Very INão



VIDA SOCIAL DA INFORMAÇÃO, A

by JOHN SEELY BROWN, PAUL DUGUID Computers - 1899 -

Com base em suas experiências profissionais como cientista-chefe e pesquisador-

Mini Balicine

Annual report of the American historical Association - Page 198

History - 1884

... Berkeley Seized Letters as Legal Evidence in the Paris Revolutionary Tribunal, 1793 1794. Carla Hesse, University of California, ... Snippet view - About this book - Add to my library - More editions



New Jersey history

by New Jersey Historical Society - History 1971

Annalee Saxenian, "In Search of Power: The Organization of Business Interests in Silicon Valley and Route 128, Economy and Society 18 (1989): 25-70

; ...

Snippet view - About this book - Add to my library - More editions

"Our reputation precedes us"



The frequency of misdatings



Classification Errors



Hamlet

by William Shakespeare - Antiques & Collectibles - 1994 - 71 pages

très douces manières et de grande mine. En vérité, pour parler de lui avec tact, il est le calendrier, la carte de la gentry ; vous trouverez en lui le ...

Limited preview - About this book - Add to my library - More editions



MADAME BOVARY: 보봐리 부인(불문학작품 40)

by G.FLAUBERT - Antiques & Collectibles - 1988 - 430 pages
No preview available - About this book - Add to my library



Speculum - Page 283

by Mediaeval Academy of America, JSTOR (Organization) - Health & Fitness - 1962

WERNER JAEGER, Early Christianity and Greek Paideia. Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1961. Pp. ii, 154. \$8.25. ...

Snippet view - About this book - Add to my library - More editions



Mae West: An Icon in Black and White - Page 267

by Jill Watts - Religion - 2003 - 400 pages

Diamond Lil's iand **Mae West**'si successful perpetuation of female trans- ... In the midst of this revival of the **cult** of ...

Limited preview - About this book - Add to my library - More editions



Australian women: contemporary feminist thought - Page 153

by Norma Grieve, Ailsa Burns - Foreign Language Study - 1994 - 356 pages

The group moved more or less at random from the writings of Michel Foucault to lesbian-feminist philosophy, from Freud to Freud's commentators and critics. ...

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Classification Errors



The merchant of Venice

by Christopher Rice, William Shakespeare - Foreign Language Study - 2007 - 72 pages No preview available - About this book - Add to my library - More editions



The Century dictionary: an encyclopedic lexicon of the English language - Page 6180

edited by William Dwight Whitney - Family & Relationships - 1891

JD Whitney, The Yosemite Book, p. 24. 2. A device used in dredging, for sweeping

the sea-bed in order to obtain delicate forms of marine life, ...

Full view - About this book - Add to my library - More editions



Melting the earth: the history of ideas on volcanic eruptions - Page 76

by Haraldur Sigurdsson - Foreign Language Study - 1999 - 260 pages

Dante also speculated on the powers that had raised the lands above the primeval ocean, opting for an extraterrestrial force. Action was effected "by way of ...

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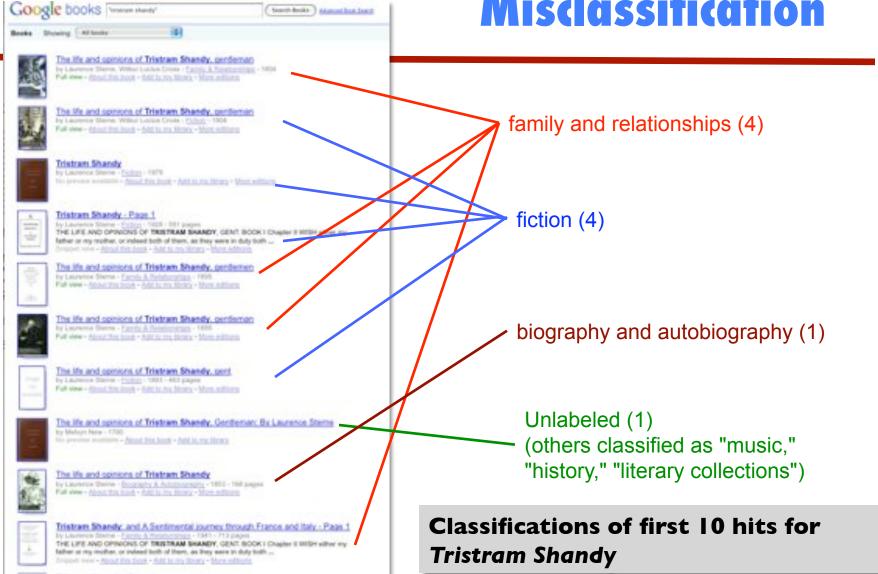
Catalogue of copyright entries - Page 744

by Library of Congress. Copyright Office - Drama - 1923

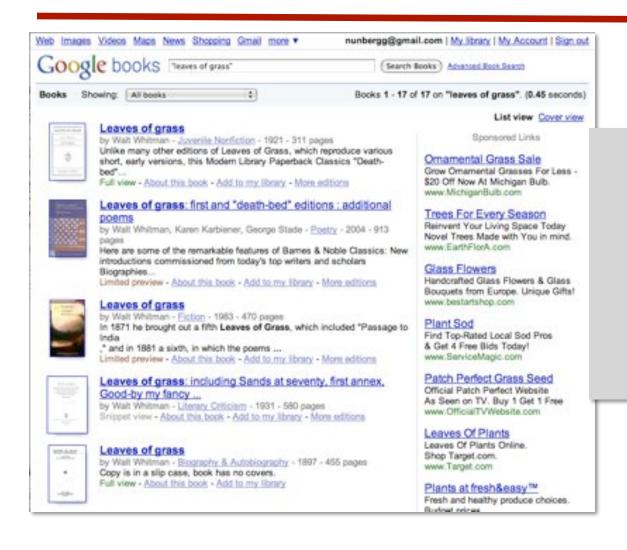
13, Feb., 1922» 0 Feb. 25, 1922 : 2 c. and aff. Mar. 9. ... Volume of production — united States ...

Full view - About this book - Add to my library - More editions

The Pervasiveness of Misclassification



The Pervasiveness of Misclassification



First 10 hits for Leaves of Grass classify it as:

Juvenile Nonfiction
Poetry
Fiction
Literary Criticism
Biography & Autobiography,
Counterfeits and Counterfeiting

More bad metadata



Jane Eyre: An Autobiography

by Currer Bell - <u>History</u> - 2008 - 364 pages Limited preview - About this book - Add to my library - More editions



Jane Eyre

by Charlotte Brontë - Governesses - 1986 - 483 pages
No preview available - About this book - Add to my library - More editions



Jane Eyre

by Charlotte Brontë - <u>Love stories</u> - 2000 - 452 pages No preview available - <u>About this book</u> - <u>Add to my library</u>



Jane Eyre

by Charlotte Brontë, Basil Davenport - <u>Architecture</u> - 1946 - 474 pages Snippet view - About this book - Add to my library - More editions



Jane Eyre

by Charlotte Brontë, Clare West - Antiques & Collectibles - 1992 - 105 pages No preview available - About this book - Add to my library - More editions



More bad metadata



Jane Eyre: An Autobiography

by Currer Bell - <u>History</u> - 2008 - 364 pages Limited preview - About this book - Add to my library - More editions



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by Charlotte Brontë, Clare West - Antiques & Collectibles - 1992 - 105 pages No preview available - About this book - Add to my library - More editions



Other metadata issues

Books ascribed to authors of introductions, or given no author at all.





Other metadata issues

Titles linked to unrelated works.





Other metadata issues

Strange bedfellows



The Mosaic navigator: The essential guide to the internet interface

by Sigmund Freud, Katherine Jones - 1939 - 218 pages Includes glossary, index.

No preview available - About this book - Add to my library

Who is to blame and what is to be done?

"We got the metadata from the libraries":

yes, sometimes... but libraries didn't classify *Hamlet* as "antiques and collectibles" or *Speculum* as "Health & Fitness"

Libraries don't use BISAC headings like "Antiques and Collectibles" and "Health & Fitness" in the first place...

And publishers didn't assign BISAC codes to books published before the 1980's



The world according to BISAC

Making space for Bambi & Bullwinkle

```
JNF003250
JUVENILE NONFICTION / Animals / Cows *

JNF003050
JUVENILE NONFICTION / Animals / Deer, Moose & Caribou
JNF003050
JUVENILE NONFICTION / Animals / Disosaurs & Prehistoric
Creatures

JNF003060
JUVENILE NONFICTION / Animals / Dogs
JNF003210
JUVENILE NONFICTION / Animals / Ducks, Geese, etc.

JNF003070
JUVENILE NONFICTION / Animals / Elephants
```

... and Schiller, Petrarch & Verlaine

POE011000	POETRY / Canadian	
POE012000	POETRY / Caribbean & Latin American	
POE005030	POETRY (Continental European	
POE005020	POETRY / English, Irish, Scottish, Welsh	
POE014000	POETRY / Epic *	

The world according to BISAC

Making shelf space for Bambi & Bullwinkle

```
JNF003260
JUVENILE NONFICTION / Animals / Cows *

JNF003050
JUVENILE NONFICTION / Animals / Deer, Moose & Caribou
JUVENILE NONFICTION / Animals / Disosaurs & Prehistoric
Creatures

JNF003060
JUVENILE NONFICTION / Animals / Dogs
JNF003210
JUVENILE NONFICTION / Animals / Ducks, Geese, etc.

JNF003070
JUVENILE NONFICTION / Animals / Elephants
```

... and scrunching together Schiller, Petrarch & Verlaine

```
POE012000 POETRY / Canadian
POE012000 POETRY / Caribbean & Latin American
POE005030 POETRY (Continental European
POE005020 POETRY / English, Irish, Scottish, Welsh
POE014000 POETRY / Epic *
```

Squeezing the universal library into a sububan bookstore

Correcting the Problem

Google: "We're on it (but it isn't a first priority)"

Correcting errors as noticed (like bad scans)?

Crowd Sourcing?

But errors/bad metadata affect 000,000's of records

"Error correction" doesn't address poor & missing metadata, inconsistent/confusing/inappropriate classification schemes

Why should the metadata decisions be left to Google engineers?

Correcting the Problem

HathiTrust to the rescue?

But HathiTrust makes available only out-of-copyright works, has (relatively) limited computational resources

Why should Google have no obligations to do GBS right?

Google Book Search is "a tremendous public good for students, for teachers, for scholars, for everyone."

Derek Slater, Google

But a public good implies a public trust