

#c4l15

Your Chocolate is in My Peanut Butter!

Mixing up Content and Presentation Layers to Build Smarter Books in Browsers with RDFa, Schema.org, and Linked Data Topics

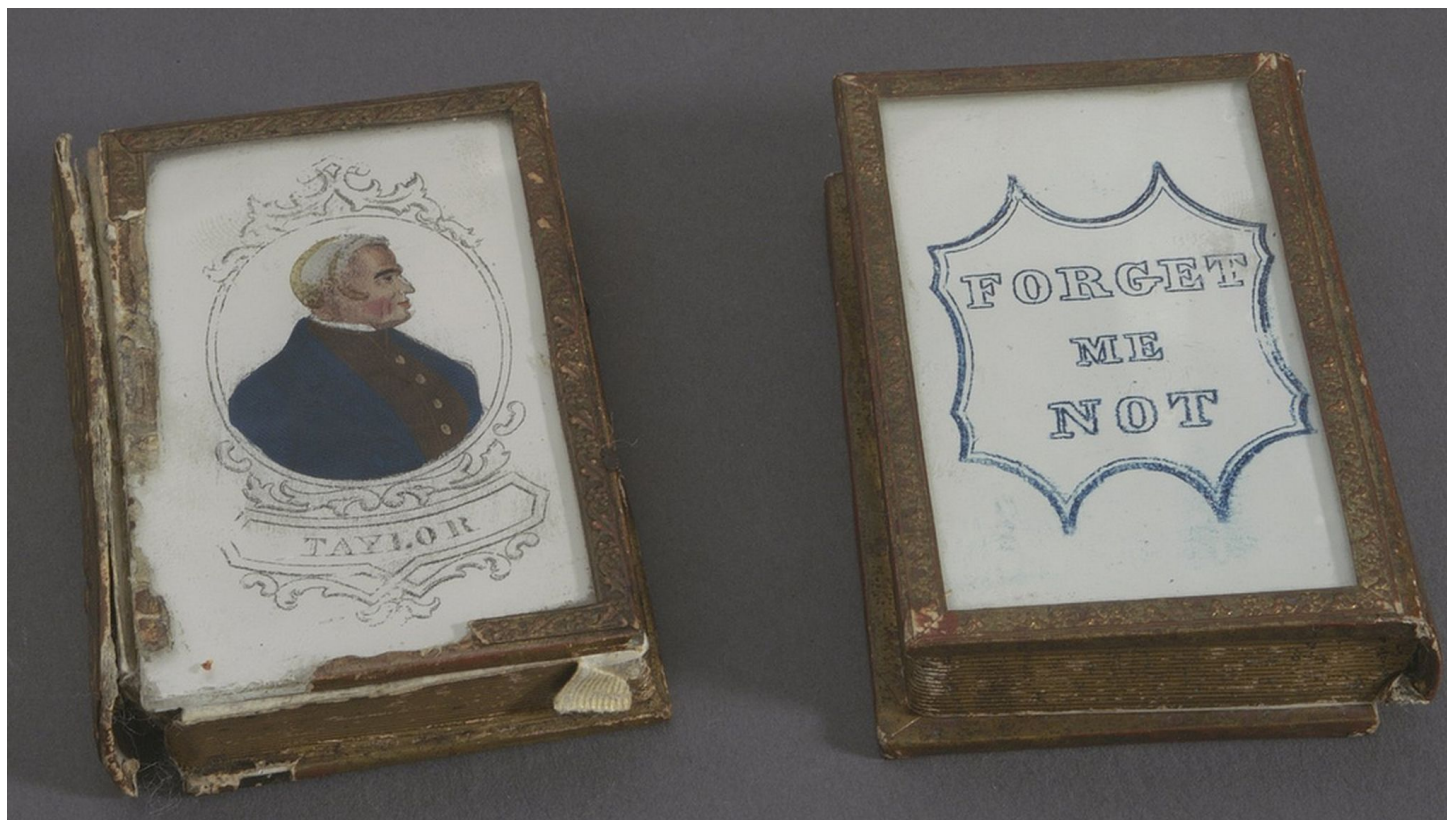
Jason Clark
@jaclark

Scott Young
@hei_scott



code4lib

PDX 2015



The Swabian

He was slow in learning how to talk. "My parents were so worried," he later recalled, "that they consulted a doctor." Even after he had begun using words, sometime after the age of 2, he developed a quirk that prompted the family maid to dub him "der Depperte," the dopey one, and others in his family to label him as "almost backwards." Whenever he had something to say, he would try it out on himself, whispering it softly until it sounded good enough to pronounce aloud. "Every sentence he uttered," his worshipful younger sister recalled, "no matter how routine, he repeated to himself softly, moving his lips." It was all very worrying, she said. "He had such difficulty with language that those around him feared he would never learn."¹

His slow development was combined with a cheeky rebelliousness toward authority, which led

PREV
PAGENEXT
PAGE

HOME

NEXT
PAGE

MENU

BACK



The “Book” in a Browser

Atomizable, Analyzable, Linkable, Reusable

Outline

Library as Publisher
Data Markup and Model
Opportunities
Future Direction

What if?

Books were machine indexed
for semantic discovery

Journal articles were semantically tagged
at the page level

Library as Publisher

Library as Publisher

1. Software Development
2. Data Storage and Archiving
3. Metadata
4. Discovery and Analytics



"But think of the S.E.O. if the title actually named the two cities."



```
1 <title>Hypertext Links</title>
2 <h1>Links and Anchors</h1>
3 A link is the connection between one piece of
4 <a href=WhatIs.html>hypertext</a> and another.
```

www.w3.org/History/19921103-hypertext/hypertext/WWW/Link.html

The Research

Institute of Museum and Library Services
Sparks Ignition Grant



Web Book Prototyping

Web Book

Did you mean:

Ebook

Always correct to "Ebook"

Add to personal dictionary

Ignore all

Prototype 1

demo: arc.lib.montana.edu/book/home-cooking-history-409

code: github.com/jasonclark/bib-template

Prototype 2

demo: arc.lib.montana.edu/book/opsis

code: github.com/msulibrary/bib-template-fiction

Our Initial Project

Digital Book for History Class

MS Word -> Static HTML -> Dynamic HTML

API driven and Linked Data

[Table of Contents](#) > Recipe and Essay
Gingerbread

Ingredients:

- 1/2 c. soft shortening
- 2 1/4 c. flour
- 2 T. sugar
- 1 tsp. soda
- 1 egg
- 1/2 tsp. salt
- 1 c. dark New Orleans Molasses
- 1 tsp. ginger
- 1 c. boiling water
- 1 tsp. cinnamon

Directions:

- Mix shortening, sugar and egg.
- Blend in molasses and cup of boiling water, cooled first.
- And flour, soda, salt, ginger and cinnamon.
- Beat until smooth.
- Pour into well-greased 9 inch square pan.
- Bake 45 minutes to 50 minutes at 350 degrees.



- Serve with whipped cream and applesauce.

[Table of Contents](#) > Recipe and Essay

Tradition and Travel

by Jonathan Bergh

Every winter the Bergh family celebrates the season with a special tradition. It is the time of the year when the Bergh family

young Lyle Bergh giny was the catalyst for e countless foodstuffs t outside of the farm m Lyle Bergh took his fi gingerbread cake he k something special. To family gingerbread m represented a season, Lyle it represented sc more.

In 1960s northeast Montana's food optio limited. For inhabitat Plentywood, Montana and his family, it mea would eat farm food: meals like steak, pots and coffee. Lyle would home and have farm f mother Bee cooked. V his family would go S Washington, it would more than just family

When the Bergh fe headed to Seattle, W the winter, it meant t would be reunited, an there would be treats going to Seattle mean



nts > Recipe and Essay

1 and Travel

by Jonathan Bergh

ie Bergh family
is the season with a
radition. It is the time of
when the Bergh family

young Lyle Bergh gingerbread was the catalyst for exposure to countless foodstuffs that were outside of the farm menu. Once Lyle Bergh took his first bite into gingerbread cake he knew he ate something special. To the Bergh family gingerbread may have represented a season, but for Lyle it represented so much more.

In 1960s northeastern Montana's food options were limited. For inhabitants of Plentywood, Montana, like Lyle and his family, it meant that you would eat farm food: simple meals like steak, potatoes, milk and coffee. Lyle would come home and have farm food that his mother Bee cooked. When he and his family would go Seattle, Washington, it would represent more than just family gatherings.

When the Bergh family headed to Seattle, Washington in the winter, it meant that a family would be reunited, and it meant there would be treats. For Lyle, going to Seattle meant that he

going to Seattle meant that he would have a break from farm food and farm work. It meant that he would get to see his grandma Boileau. Seattle, Washington is the place that the tradition of gingerbread cake started in the Bergh family. Grandma Boileau was in the restaurant business so Lyle knew that he and his family would be eating well-prepared food. It was on these trips that Lyle got his first taste of gingerbread cake. This cake was soft and moist and topped with whipped cream that tingled his taste buds. This sugarless cake also represented that here in Seattle he and the family would have foodstuffs that were not accessible in Montana.

Lyle knew that whenever the family traveled Seattle that he would be exposed to new and foreign foods. Foods like avocados and seafood became some of Lyle's favorites because they reminded him of family. This is not to say that he disliked farm food, but Seattle food was a

farm food, but Seattle food was a delicacy that Lyle could only get once a year. Because he loved gingerbread so much his mother Bee brought the recipe back to Montana. Gingerbread became a family tradition that has continued for generations.

Bringing the recipe for gingerbread back to Montana meant bringing back memories for Lyle. It brought back memories of food being shared with him for the first time along with sharing moments with loved ones. Most importantly, it gave Lyle Bergh a tradition that he continues to this day. Whenever the first snow of winter falls you can always expect that Lyle Bergh will be baking gingerbread. For Lyle baking gingerbread meant taking the little piece of Seattle and bringing it back to northeastern Montana.

[Table of Contents](#) > Recipe and Essay

Tradition and Travel

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Every
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the farm menu. Once Lyle
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gingerbread cake he knew he
ate something special. To the
Bergh family gingerbread may
have represented a season, but

Book Reader

[Table of Contents](#)[Title Page](#)[Chapter](#)

The Mysteries of Udolpho by Ann Radcliffe

[Home](#) > [Section](#) > [Current](#)

The Mysteries of Udolpho, Chapter 1

On the pleasant banks of the Garonne, in the province of Gascony, stood, in the year 1584, the chateau of Monsieur St. Aubert. From its windows were seen the pastoral landscapes of Guienne and Gascony stretching along the river, gay with luxuriant woods and vine, and plantations of olives. To the south, the view was bounded by the majestic Pyrenees, whose summits, veiled in clouds, or exhibiting awful forms, seen, and lost again, as the partial vapours rolled along, were sometimes barren, and gleamed through the blue tinge of air, and sometimes frowned with forests of gloomy pine, that swept downward to their base. These tremendous precipices were contrasted by the soft green of the pastures and woods that hung upon their skirts; among whose flocks, and herds, and simple cottages, the eye, after having scaled the cliffs above, delighted to repose. To the north, and to the east, the plains of Guienne and Languedoc were lost in the mist of distance; on the west, Gascony was bounded by the waters of Biscay.

M. St. Aubert loved to wander, with his wife and daughter, on the margin of the Garonne, and to listen to the music that floated on its waves. He had known life in other forms than those of pastoral simplicity, having mingled in the gay and in the busy scenes of

Author(s):

Radcliffe, Ann

Date:

1794-05-08

Category:

Gothic fiction

Context:

The Mysteries of Udolpho
[wikipedia]

Page:

-1-

The Mysteries of Udolpho, Chapter 1

[menu +](#)

On the pleasant banks of the Garonne, in the province of Gascony, stood, in the year 1584, the chateau of Monsieur St. Aubert. From its windows were seen the pastoral landscapes of Guienne and Gascony stretching along the river, gay with luxuriant woods and vine, and plantations of olives. To the south, the view was bounded by the majestic Pyrenees, whose summits, veiled in clouds, or exhibiting awful forms, seen, and lost again, as the partial vapours rolled along, were sometimes barren, and gleamed through the blue tinge of air, and sometimes frowned with forests of gloomy pine, that swept downward to their base. These tremendous precipices were contrasted by the soft green of the pastures and woods that hung upon their skirts; among whose flocks, and herds, and simple cottages, the eye, after having scaled the cliffs above, delighted to repose. To the north, and to the east, the plains of Guienne and Languedoc

Web Book Dev Stack

HTML

CSS

(Javascript)

MySQL

PHP

schema.org

RDFa

Atomized

Data Model and API

Schema.org

controlled vocabulary

```
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    &lt;li>In a large bowl whip egg whites with salt until foamy. Add cream of tartar and continue to beat until soft
    &lt;li>Quickly fold in flour mixutre.&lt;/li>
    &lt;li>Pour into a 10 inch tube pan.&lt;/li>
    &lt;li>Bake for 45 minutes.&lt;/li></recipeInstructions>
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epub:type

semantic divisions...

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74 <nav>
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76     <span typeof="Breadcrumb"><a href="/book/opsis/index.html" rel="index url"
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77     <span typeof="Breadcrumb"><a href="/book/opsis/table-of-contents.html" rel="url"
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82
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Extracted structured data

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ingredients:	1/2 c. soft shortening
ingredients:	2 1/4 c. flour
ingredients:	2 T. sugar
ingredients:	1 tsp. soda
ingredients:	1 egg
ingredients:	1/2 tsp. salt
ingredients:	1 c. dark New Orleans Molasses
ingredients:	1 tsp. ginger
ingredients:	1 c. boiling water
ingredients:	1 tsp. cinnamon
recipeinstructions:	Mix shortening, sugar and egg. Blend in molasses and cup of boiling water, cooled first. And flour, soda, salt, ginger and cinnamon. Beat until smooth. Pour into well-greased 9 inch square...
cookingmethod:	Bake
cooktime:	PT45M

[Gingerbread - Jonathan Bergh](#)



arc.lib.montana.edu/book/.../article-jonathan-bergh.html ▼

45 mins

Table of Contents > Recipe and Essay **Gingerbread**. Ingredients: 1/2 c. soft shortening; 2 1/4 c. flour; 2 T. sugar; 1 tsp. soda; 1 egg; 1/2 tsp. salt; 1 c. dark New ...

Linked

RDFa

JSON-LD

Linked Data Topics

About: [Le Seigneur des anneaux](#)

An Entity of Type : [1950sFantasyNovels](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](#)

Le Seigneur des anneaux (The Lord of the Rings) est un roman en trois volumes de J. R. R. Tolkien paru en 1954 et 1955.L'histoire reprend certains des personnages présentés dans Le Hobbit, premier roman de l'auteur paru en 1937, mais l'œuvre est plus complexe et plus sombre. Tolkien entreprend sa rédaction à la demande de son éditeur, Allen & Unwin, à la suite du succès critique et commercial du Hobbit.

Property	Value
dbpedia-owl:abstract	<ul style="list-style-type: none"> The Lord of the Rings is an epic high fantasy novel written by English author J. R. R. Tolkien. The story began as a sequel to Tolkien's 1937 children's fantasy novel The Hobbit, but eventually developed into a much larger work. It was written in stages between 1937 and 1949, much of it during World War II. It is the second best-selling novel ever written, with over 150 million copies sold. The title of the novel refers to the story's main antagonist, the Dark Lord Sauron, who had in an earlier age created the One Ring to rule the other Rings of Power as the ultimate weapon in his campaign to conquer and rule all of Middle-earth. From quiet beginnings in the Shire, a hobbit land not unlike the English countryside, the story ranges across northwest Middle-earth, following the course of the War of the Ring through the eyes of its characters, the hobbits Frodo Baggins, Samwise "Sam" Gamgee, Meriadoc "Merry" Brandybuck and Peregrin "Pippin" Took, but also the hobbits' chief allies and travelling companions: the Men Aragorn, a Ranger of the North and Boromir, a Captain of Gondor; Gimli, a Dwarf warrior; Legolas, an Elven prince; and Gandalf, a Wizard. The work was initially intended by Tolkien to be one volume of a two-volume set, the other to be The Silmarillion, but this idea was dismissed by his publisher. For economic reasons The Lord of the Rings was published in three volumes over the course of a year from 29 July 1954 to 20 October 1955. The three volumes were titled The Fellowship of the Ring, The Two Towers, and The Return of the King. Structurally, the novel is divided internally into six books, two per volume, with several appendices of background material included at the end of the third volume. Some editions combine the entire work into a single volume. The Lord of the Rings has since been reprinted numerous times and translated into many languages. Tolkien's work has been the subject of extensive analysis of its themes and origins. Although a major work in itself, the story was only the last movement of a larger epic Tolkien had worked on since 1917, in a process he described as mythopoeia.[citation needed] Influences on this earlier work, and on the story of The Lord of the Rings, include philology, mythology, religion and the author's distaste for the effects of industrialization, as well as earlier fantasy works and Tolkien's experiences in World War I. The Lord of the Rings in its turn is considered to have had a great effect on modern fantasy; the impact of Tolkien's works is such that the use of the words "Tolkienian" and "Tolkienesque" have been recorded in the Oxford English Dictionary. The enduring popularity of The Lord of the Rings has led to numerous references in popular culture, the founding of many societies by fans of Tolkien's works, and the publication of many books about Tolkien and his works. The Lord of the Rings has inspired, and continues to inspire, artwork, music, films and television, video games, and subsequent literature. Award-winning adaptations of The Lord of the Rings have been made for radio, theatre, and film. Le Seigneur des anneaux (The Lord of the Rings) est un roman en trois volumes de J. R. R. Tolkien paru en 1954 et 1955.L'histoire reprend certains des personnages présentés dans Le Hobbit, premier roman de l'auteur paru en 1937, mais l'œuvre est plus complexe et plus sombre. Tolkien entreprend sa rédaction à la demande de son éditeur, Allen & Unwin, à la suite du succès critique et commercial du Hobbit. Il lui faut douze ans pour parvenir à achever ce nouveau roman qu'il truffe de références et d'allusions au monde du Silmarillion, la Terre du Milieu, sur lequel il travaille depuis 1917 et dans lequel Le Hobbit a été attiré de son auteur.C'est une des œuvres fondamentales de la littérature dite de fantasy, terme que Tolkien explicite dans son essai Du conte de fées de 1939. Tolkien lui-même considèrerait son livre comme , écrit . Cette œuvre est composée de six livres, qui ne portent pas de titres. À l'origine, Tolkien souhaite publier Le Seigneur des anneaux en un seul volume, mais le prix du papier étant trop élevé en cette période d'après-guerre, l'œuvre est divisée en trois volumes : La Communauté de l'anneau (The Fellowship of the Ring), Les Deux Tours (The Two Towers) et Le Retour du roi (The Return of the King). On fait souvent référence à cette œuvre comme à « la trilogie du Seigneur des anneaux », terme techniquement incorrect car l'œuvre fut écrite et conçue d'un seul tenant. Néanmoins, Tolkien lui-même reprend dans ses lettres, de temps à autres, le terme de « trilogie » lorsqu'il est employé par ses correspondants.
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External Enumerations

"We define here some specific integration points through which selected externally maintained vocabulary can be published as part of schema.org markup"

www.w3.org/wiki/WebSchemas/ExternalEnumerations

additionalTypes, specialty

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Analyzed

Web Analytics, UX

Explorer **Navigation Summary** In-Page

Pageviews VS. [Select a metric](#)

Day Week Month



● Pageviews



Primary Dimension: **Page** [Other](#)


<div> <div>Plot Rows</div> <div>Secondary dimension</div> <div>Sort Type: Default</div> <div>advanced</div> <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> </div>								
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<input type="checkbox"/>	1. arc.lib.montana.edu/book/home-cooking-history-409/	275	193	00:02:06	81	62.96%	34.55%	\$0.00

Starting pages

929 sessions, 414 drop-offs

 www.lib.montana.edu/
270

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170

 arc.lib.mon...istory-409
104

 arc.lib.mon...409/item-1
77

 arc.lib.mon...tem-8.html
43


 (+25 more pages)
265

1st Interaction

511 sessions, 84 drop-offs


 arc.lib.mon...story-409/
265

 arc.lib.mon...tents.html
72

 arc.lib.mon...eface.html
51


 www.lib.montana.edu/
18


 www.lib.mon....edu/find/
15


 (+21 more pages)
90


2nd Interaction

422 sessions, 98 drop-offs

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112

 arc.lib.mon...story-409/
56

 arc.lib.mon...eface.html
42


 www.lib.montana.edu/
25


 www.lib.mon...edu/people
14

 (+31 more pages)
173


3rd Interaction


319 sessions, 48 drop-offs

 arc.lib.mon...tents.html
57

 arc.lib.mon...story-409/
36

 arc.lib.mon...em-13.html
26

 arc.lib.mon...istory-409
18

 www.lib.mon....edu/find/
14

 (+27 more pages)
168

Step -1
269 sessions, 0 drop-offs

arc.lib.mon...story-409/
216

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(1 page)



276 Through traffic (96.2%)
11 Drop-offs (3.83%)

287 Sessions

book-preface.html
43

item-12.html
7

index.html
3

Step 0
287 sessions, 11 drop-offs

arc.lib.mon...tents.html
287

Step 1
276 sessions, 58 drop-offs

arc.lib.mon...em-13.html
51

arc.lib.mon...tem-8.html
27

arc.lib.mon...story-409/
23

arc.lib.mon...eface.html
19

arc.lib.mon...em-22.html
19

(+21 more pages)
137

Step 2
200 sessions, 32 drop-offs

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arc.lib.mon...story-409/
21

arc.lib.mon...eface.html
10

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10

arc.lib.mon...em-27.html
10

(+15 more pages)
67

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<input type="checkbox"/>	1. google / organic	334 (38.22%)	73.35%	245 (45.62%)	60.18%	4.31	00:02:52
<input type="checkbox"/>	2. montana.edu / referral	198 (22.65%)	41.92%	83 (15.46%)	11.11%	7.26	00:06:04
<input type="checkbox"/>	3. (direct) / (none)	190 (21.74%)	72.63%	138 (25.70%)	30.53%	6.85	00:05:08
<input type="checkbox"/>	4. t.co / referral	52 (5.95%)	69.23%	36 (6.70%)	73.08%	1.42	00:00:19
<input type="checkbox"/>	5. lib.montana.edu / referral	16 (1.83%)	0.00%	0 (0.00%)	0.00%	6.88	00:05:04
<input type="checkbox"/>	6. diffbot.com / referral	11 (1.26%)	0.00%	0 (0.00%)	18.18%	6.55	00:12:31
<input type="checkbox"/>	7. shelf.lib.montana.edu / referral	11 (1.26%)	0.00%	0 (0.00%)	45.45%	4.55	00:06:54
<input type="checkbox"/>	8. facebook.com / referral	6 (0.69%)	50.00%	3 (0.56%)	33.33%	11.50	00:13:50
<input type="checkbox"/>	9. isbn.lib.montana.edu / referral	6 (0.69%)	33.33%	2 (0.37%)	0.00%	4.00	00:06:40
<input type="checkbox"/>	10. aol / organic	5 (0.57%)	60.00%	3 (0.56%)	100.00%	1.00	00:00:00

Katufulwurst (German Potato Sausage)

Ingredients:

- 16 lbs. potatoes, peeled and diced
- 5 lbs. onions, peeled and chopped
- 4 lbs. ground beef
- 2 lbs. ground pork
- Pepper, Salt, Garlic Powder and Italian seasoning to taste
- 15 pig casings
- 3 cans beers

Directions:

- Using an electric grinder or hand crank, grind potatoes and onions.
- Combine with beef, pork, seasonings, and beer.
- Stuff mixture into casings and use a sewing needle to poke holes into the sides to prevent air bubbles.
- When stuffed tightly, tie off and place onto an oiled sheet pan.
- Poke sausages again, and bake 350 degrees for one 1-1 1/2 hours.
- If you have leftover mixture, press into oiled casserole dishes, and bake 350 degrees for one hour or until golden brown.

press into oiled casserole dishes, and bake 350 degrees for one hour or until golden brown.

- This dish is known as Gahactis.

After consulting a native German friend, I discovered the correct spelling of this dish is probably Kartoffeln und Wurst.

Time to Click

Name	Amount
2.0 minutes-3.0 minut	87
10.0-15.0 seconds	76
25.0-30.0 seconds	63
3.0 minutes-4.0 minut	58
6.0-8.0 seconds	54
15.0-20.0 seconds	48
1.5 minutes-2.0 minut	45
1 minute-1.5 minutes	40
45.0-60.0 seconds	32
8.0-10.0 seconds	32
4.0 minutes-5.0 minut	30
4.0-5.0 seconds	27
5.0-6.0 seconds	25
2.0-3.0 seconds	23
Other	148
Total	788

The UX of Reading

The UX of Reading

scrolling
searching
paginating
page turning
bookmarking
hyperlinking
multimedia
metadata
images
community interactions

The UX of Reading

What makes you choose one book format over another?

“Availability”

Reusable

Web Discovery
Social Sharing
Deep Linking

2. google / organic	baklava tradition
3. google / organic	german chili recipe
4. google / organic	montana state university
5. google / organic	angel food cake essay +
6. google / organic	bison pot roast slow cooker with beer
7. google / organic	chocolate sheets cakes for mother
8. google / organic	composition cooking cake with my mother
9. google / organic	debone redfish fillet
10. google / organic	essay my mother not at home decided to bake a cake



Scott W. H. Young

@hei_scott



Check out Opsis (in a browser)
arc.lib.montana.edu/book/opsis/

6:54 PM - 9 Feb 2015



OPSIS
Literary Arts Journal

[Opsis](#)

Literary Arts Journal @ Montana State University (MSU)



MSU Library @msulibrary



<input type="checkbox"/>	Social Network ?	Acquisition		
		Sessions ? ↓	% New Sessions ?	New Users ?
	Cookbook	60 % of Total: 0.02% (392,074)	68.33% Avg for View: 40.89% (67.13%)	41 % of Total: 0.03% (160,302)
<input type="checkbox"/>	1. Twitter	52 (86.67%)	69.23%	36 (87.80%)
<input type="checkbox"/>	2. Facebook	8 (13.33%)	62.50%	5 (12.20%)

Deep-linking the book

HTTP + URL

<http://arc.lib.montana.edu/book/opsis/item/21>

<http://arc.lib.montana.edu/book/opsis/table-of-contents.html>

The “Book” in a Network

Designed for the bot’s experience

Designed for the reader’s experience

Ongoing Research

Sparks Grant

Data Modeling and Transformation

Genres

UX

Addressing Limitations

Survey of the Field

HTMLBook

<https://github.com/oreillymedia/HTMLBook>

Leanpub

<https://leanpub.com/>

GitBook

<https://www.gitbook.com/>

Penflip

<https://www.penflip.com/>

gitenberg

<https://gitenberg.github.io/>

Book in Browser Conference

<http://booksinbrowsers.org/>

Library Publishing Coalition

<http://www.librarypublishing.org/>

Prototype 1

demo: arc.lib.montana.edu/book/home-cooking-history-409

code: github.com/jasonclark/bib-template

Prototype 2

demo: arc.lib.montana.edu/book/opsis

code: github.com/msulibrary/bib-template-fiction

A Research Team Effort



Patrick O'Brien: Semantic Web Research Director at Montana State University Library.

Scott Young: Digital Initiatives Librarian at Montana State University.

Jason Clark: Head of Library Informatics and Computing at Montana State University Library

Kenning Arlitsch: Dean of the Library at Montana State University. His book, co-authored with Patrick OBrien, is titled *Improving the Visibility and Use of Digital Repositories through SEO*, and was published in February 2013.

Thanks!

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