# Taxonomy Displays Bridging UX & Taxonomy Design

Content Strategy Seattle Meetup April 28, 2015 Heather Hedden



### About Heather Hedden

- Senior Vocabulary Editor, Cengage Learning
- Taxonomy Consultant
- Continuing education online workshop instructor,
   Simmons College School of Library and Information Science
- Freelance back-of-the-book indexer
- Author of The Accidental Taxonomist (Information Today, Inc.)



# Outline

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations



# **Outline**

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations



# **Controlled vocabulary**

- An authoritative, restricted list of terms (words or phrases) mainly used for indexing/tagging/classifying/ categorizing content to support findability/retrieval
- Controlled in who and when new terms can be added
- May or may not have structured relationships between terms



# **Taxonomy**

- A controlled vocabulary with broader/narrower (parent/child) term relationships that include all terms to create a hierarchical structure
  - With focus for categorizing and organizing concepts
  - May or may not have equivalent non-preferred terms (synonyms, etc.) to point to the correct, preferred terms
- 2. A controlled vocabulary used in corporate/enterprise applications
  - Used synonymously for any controlled vocabulary



Is a web site navigation (hierarchy of menus, site map) a taxonomy?

### Not quite, but is related

- Navigation labels match pages one-to-one, rather than to multiple categorized/tagged items as in a taxonomy.
- Navigation structure reflects a custom experience, not standard hierarchical relationships as in a taxonomy.
- Navigation label names may seek to attract/entice, rather than purely to inform.



# Controlled vocabulary or taxonomy (def. #2) types

- 1. Term list / pick list
- 2. Synonym ring (Search "thesaurus", not usually displayed)
- 3. Authority file
- 4. Taxonomy (def #1)
  - Hierarchical taxonomy
  - Faceted taxonomy
- 5. Thesaurus
- 6. Ontology



### Term List/Pick List

- No hierarchical structure
- No synonyms

# Tips:

- Make the scroll-box as vertically long as possible.
- Topic names should be obvious and not too many.
- Named entity (proper noun) lists may be longer.
- May be used within facets.

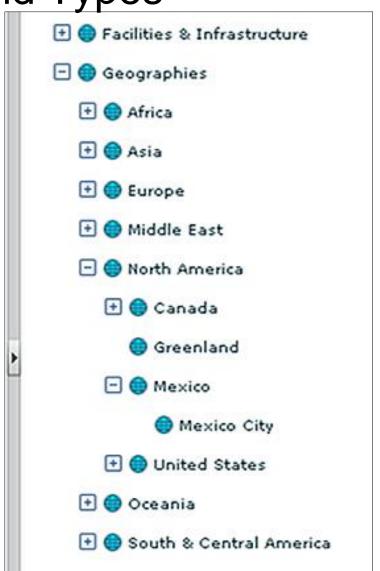


Country



Taxonomy - Hierarchical

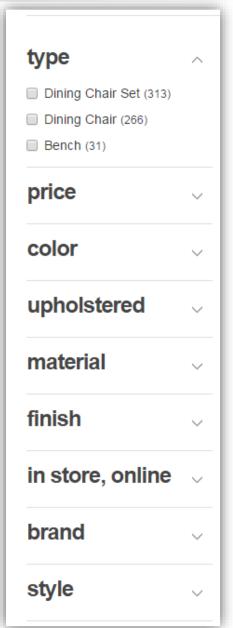
Has broader term/narrower term relationships that include all terms to create a hierarchical structure





# Taxonomy - Faceted

- For serving faceted classification, which allows the assignment of multiple classifications to an object
- A "dimension" of a query; a type of concept; domain of content
- Intended for searching with multiple terms/values in combination, one from each facet: to "limit by" filters





### **Thesaurus**

- A controlled vocabulary that has standard structured relationships between terms
  - Hierarchical: broader term/narrower term (BT/NT)
  - Associative: related terms (RT)
  - Equivalence: preferred term ("use for" or "used for")/nonpreferred term (use) (USE/UF)
- Also supports notes, such as scope notes (SN), for terms, as needed

### Thesaurus entry example

### materials acquisitions acquisitions (of materials) library acquisitions collection development accessions NT approval plans gifts and exchanges materials claims materials orders subscriptions RT book vendors iobbers subscription agencies subscription cancellations

In accordance with ANSI/NISO Z.39.19-2005 standards



# Taxonomy Definitions and Types - Summary

\_ess

# **Complexity of Controlled Vocabularies**

More

Pick List	Synonym Ring	Authority File	Taxonomy	Thesaurus	Ontology
Ambiguity control		Ambiguity control	Ambiguity control	Ambiguity control	Ambiguity control
	Synonym control	Synonym control	(Synonym control)	Synonym control	(Synonym control)
			Hierarchical relationships	Hierarchical relationships Associative relationships	Semantic relationships
					Classes



# **Outline**

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations



# Term Displays

# Wording of terms

### Terms should

- Reflect language of the users
- Have consistent format and style
- Be unambiguous
- Be concise for skimming



# Term Displays

# Sorting of terms

### Alphabetical sort

### **Personnel management**

- Hiring
- Letting go of employees
- Promotions
- Recruiting
- Training

### Logical sort

### **Personnel management**

- Recruiting
- Hiring
- Training
- Promotions
- Letting go of employees



# **Outline**

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations

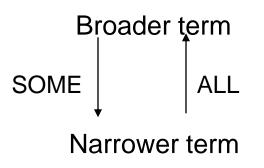


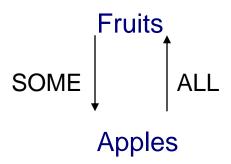
# **Purposes**

- 1. Serving users who are browsing, exploring, discovering, not searching, to whom the hierarchy is displayed.
  - Don't even have to know the first word or few letters, as in alphabetical browsing
- 2. Instructing users on classification
- 3. Enabling "recursive"/"rolled up" retrieval results (A term retrieves what is tagged to it *and* what is tagged to each on of its narrower terms, all together.)



Best practices for relationships: ANSI/NISO Z39.19





### Types:

- Generic Specific: narrower terms are a kind of broader term variation: Common noun – Proper noun (instance)
- 2. Whole Part: narrower term is within the broader term



# Suitability

- Content that is naturally categorizable: products, industries, government agencies, academic disciplines, scientific things, technologies
- Taxonomies of any size, but especially small-medium taxonomies (terms in the hundreds rather than thousands)
- Certain kinds of auto-categorization, which puts documents into approximate categories



# Hierarchical display options

- One level per web page
- Expandable tree
- Fly-out subcategories



# One level per web page

- Dex Media Superpages www.superpages.com/yellowpages
- Amazon.com (shop by Department) www.amazon.com/gp/site-directory/ref=nav\_shopall\_btn



#### Legal & Financial

Bail

Banks

Car Insurance Cash Advances

Criminal Defense Lawyer

Debt Consolidation

Divorce Lawyers

Health Insurance

Insurance

Insurance Agents

Lawyers

Life Insurance

Loans

Personal Financing

Personal Injury Lawyers

Personal Loans

Tax Returns

more...

#### Home & Garden

Air Conditioning Repair

Air Conditioning Units

Carpet Cleaners

Fencing Contractors

Flooring

Furniture Stores

Garage Door Repair

Gardeners

Home Improvement

Home Security Systems

House Cleaning

Locksmiths

Pest Control

#### **Business & Professional Services**

Employment

**Employment Agencies** 

Janitorial Services

Office Furniture

Paper Shredding

Private Investigators

Screen Printing

Security Guards

Temp Agencies

more...

#### Health & Medicine

Chiropractors

Dental Insurance

Dentists

**Drug Treatment Centers** 

Nursing Homes Optometrists

Paternity Testing

Pharmacies

Plastic Surgery

more...

#### Travel & Transportation

Airline Tickets

Bus Charter

Hotel Reservations

Hotels

Limo Services

Motels

Movers  Personal Care & Services

Beauty Salons

Health Clubs Manicures

Tanning Salons

more...

#### Arts & Entertainment

Bars

Concert Tickets

Movie Theaters

Night Clubs

Sports Tickets

Video Game Rentals

Video Rentals

more...

#### Community & Government

Adoption Agencies

Child Care Centers

Child Care Services

Churches

Community Organizations

County Government Offices

Garbage Disposal Government Offices

Post Offices

more...

Media & Communications

Answering Services

ATM Locations

Accident & Health Insurance

Accident Attorneys

Accountants

Accounting, Auditir Accounts Receivab

Adoption Attorneys

Appeals Attorneys Appraisers

Attorney

Auto Title Loans

Bail Bondsmen

Banking & Investment

Bankruptcy Bankruptcy Service

Banks Bookkeeping Service

Business Financin Business Insurance

Business Valuators Cash Advance Loa

Certified Public Ac

Check Cashing Civil Law Attorneys

Collection Agencies Collection Law Atto

Commercial Loans

Consumer Protecti

Corporate Business Court & Convention

Court Reporting Condit Cond Manual

Accident Attornevs

Accounting & Tax (

Administrative & G

Arbitration & Media Arbitrators

Asbestos Diseases

Attorneys' Informati

Auto Insurance

Bail

Bail Bonds

Bail Bonds Referral

Indiana Lawyers

Iowa Lawyers

Kansas Lawvers

Kentucky Lawyers

Louisiana Lawyers

Maine Lawyers

Maryland Lawyers

Massachusetts Lawyers

Michigan Lawyers

Minnesota Lawyers

Credit Restoration Credit Unions

Criminal Lawyer

Custody & Support Law Attorneys

Debt Consolidation

Legal Assistance

Legal Counsel & Prosecution

Legal Forms & Supplies

Legal Services Life Insurance

#### Select a State to view Lawyers Listings

Alabama Lawyers

Alaska Lawyers

Arizona Lawyers

Arkansas Lawyers

California Lawyers

Colorado Lawyers

Connecticut Lawyers

Delaware Lawyers

Florida Lawyers

Georgia Lawyers

Hawaii Lawyers

Idaho Lawyers

Illinois Lawyers

Mississippi Lawvers

Missouri Lawyers

Montana Lawyers

Nebraska Lawyers

Nevada Lawyers

New Hampshire Lawyers

New Jersey Lawyers

North Carolina Lawyers

North Dakota Lawyers

Ohio Lawyers

Oklahoma Lawyers

Oregon Lawyers

Pennsylvania Lawvers

South Carolina Lawyers

South Dakota Lawvers

Tennessee Lawvers

Utah Lawvers

Vermont Lawyers

Virginia Lawyers

Wisconsin Lawvers

New Mexico Lawyers

New York Lawyers

Rhode Island Lawyers

Texas Lawyers

Washington Lawyers

West Virginia Lawyers

Wyoming Lawyers

**Popular Cities** 

Atlanta Lawyers

Austin Lawyers

Baltimore Lawyers

Bellevue Lawyers

Boston Lawyers Bronx Lawyers

Brooklyn Lawyers

Buffalo Lawyers

Camden Lawyers

Chicago Lawyers

Clearwater Lawyers

Colorado Springs Lawyers Dallas Lawyers

Denver Lawyers

Everett Lawyers

Fort Worth Lawyers

Herndon Lawyers

Houston Lawyers

Las Vegas Lawyers

Irvine Lawyers

Long Beach Lawyers Los Angeles Lawyers

Madison Lawyers Miami Lawyers

Minneapolis Lawyers

**New York Lawyers** 

Newark Lawyers

Norfolk Lawyers

Orlando Lawyers Philadelphia Lawyers

Phoenix Lawyers

Pittsburgh Lawyers

Plano Lawyers

Portland Lawyers

Providence Lawyers

Quincy Lawyers

Richardson Lawyers Richmond Lawyers

Sacramento Lawyers

Saint Petersburg Lawyers

Salt Lake City Lawyers San Antonio Lawyers

San Diego Lawyers

San Jose Lawyers

Sarasota Lawvers

Seattle Lawyers Tampa Lawyers

Trenton Lawyers

Tucson Lawyers

Washington DC Lawyers



Shop by Department •

Heather's Amazon.com

All =

Today's Deal

#### **EARTH'S BIGGEST SELECTION**

#### Unlimited Instant Videos

Amazon Instant Video
Prime Instant Video
Shop Instant Video
Video Shorts
Your Watchlist
Your Video Library
Watch Anywhere

#### Digital Music

Digital Music Store
Prime Music
Best Sellers
New Releases
Deals

Play your music on the go Play your music at home

#### Appstore for Android

Apps
Games
Free App of the Day
Amazon Coins
Download Amazon Appstore
Amazon Apps
Your Apps and Devices

#### **Amazon Cloud Drive**

About Cloud Drive

Download the Free Apps
Unlimited Photo Storage
Plans and Pricing

#### Fire TV

Fire TV Stick

Amazon Fire Game Co

Prime Instant Video

Amazon Instant Video

Amazon Fire TV

Games for Fire TV
Amazon Cloud Drive

#### Fire Phone

Amazon Fire Phone (A
Accessories
Digital Music
Amazon Cloud Drive
Amazon Instant Video

Amazon Fire Phone (L

#### **Books & Audible**

Books

Children's Books
Textbooks
Magazines
Sell Us Your Books
Audible Membership
Audible Audiobooks &

#### Movies, Music & Game

Whispersync for Voice

Movies & TV Blu-ray Books

Arts & Photography (1,430,135)

Biographies & Memoirs (520,900)

Business & Money (1,956,562)

Calendars (204,254)

Children's Books (1,318,839)

Christian Books & Bibles (706,774)

Comics & Graphic

Computers &

Technology (433-261) Cookbooks, Food & Wine (203.682)

Crafts, Hobbies & Home (441,169)

Education & Teaching (843,512)

Engineering & Transportation (746,9

Gay & Lesbian (88,458)

Health, Fitness & Dieting (668,824)

History (3,538,397) Humor & Entertainment (638.6)

Law (568,084)

Literature & Fiction (3,0) Medical Books (788,764

Mystery, Thriller & Suspense (307,904)

Parenting & Relationships (178.8)

Politics & Social Sciences (1,632,584) Reference (4,125,010)

Religion & Spirituality (1,307,624

Romance (587,640)

Science & Math (1,534, Science Fiction & Fantasy (349,052)

Self-Help (343,781)

Sports & Outdoors (265,512) Teen & Young Adult (219,350)

Travel (424,903)

TUYS, KIUS & DADY

From the Amazon Book Editors



#### Best Books of April

Top 10

< Books

Literature & Fiction

Kids & Teens Books
 Mystery & Thriller

• See all categories

Business Technology (40,283)

Computer Science (75,026)

Databases & Big Data (2)

Photography (15,636)

Graphics & Design (50,901)

Hardware & DIY (34.368)

History & Culture (3,180)

Internet & Social Media (34.)

Mobile Phones, Tablets &

E-Readers (4.538)

Computing (71,130)

Programming (139,768)

Operating Systems (23,497)

Security & Encryption (12,94

Networking & Cloud

Software (82,072)

Web Development &

Design (37,159)

Digital Audio, Video &

Games & Strategy

Guides (12.199)

Computers & Technology

Certification (21,549)

> See more featured titles

#### User Experience Books



Jeff Gothelf with Josh Seiden

< Books

< Computers & Technology

#### Databases & Big Data

Access (1,822)

Data Mining (3,229

Data Modeling & Design (2,076)

Data Processing (7,666)

Data Warehousing (935) MySQL (381)

Oracle (1,549)

Other Databases (1,929)

Relational Databases (959)

SQL (2,384)

The Amazon Book Review

. Go inside the legal pot underground, get poetic

with Marge Piercy, and read an interview with

the author of "The Sympathizer"--all this and

more on the Amazon Book Review.

Foster Provost & Tom Fawcett

< Books

< Computers & Technology

Databases & Big Data

Data Mining



PROGRAMMING

Monthly Deals: Up to 50% Off Select Books

Home Improvement & Repair



# One level per web page

### Advantages:

- Large number of terms can display at each level
- Good for large volumes of content
- Works well with polyhierarchies
- Technically easy to implement

### Disadvantages:

- Display may take entire screen width, compromising content display
- Users see only one level at a time
- Less appropriate for taxonomies with varied/inconsistent levels or levels containing just one or a few terms
- May lack method to indicate whether a level is final or contains more lower levels



# Expandable tree

### **USA** Today

http://content.usatoday.com/community/ tags/topic-index.aspx

- USA TODAY Content Tree

   news 245,085 stories
- travel 44,553 stories■ money 79,150 stories
- 2 stories
  - advertising 907 stories
  - autos 3,670 stories
  - biztravel 735 stories
  - books 526 stories
    - business 121 stories
  - cars 9 stories
  - columnist 27 stories
  - companies 3,766 stories
  - economy 17,340 stories
    - confidence 51 stories
    - construction 11 stories
    - memployment 379 stories
    - fed 380 stories
      - beigebook 23 stories
      - rates 88 stories
      - gdp 39 stories
    - housing 2,129 stories
      - closetohome 171 stories
      - environment 2 stories
      - income 53 stories
      - inflation 99 stories
      - production 85 stories
      - productivity 23 stories
      - services 27 stories
      - survey 21 stories
      - trade 164 stories
  - gallery 36 stories
  - industries 11 869 stories



# Expandable tree

### Advantages:

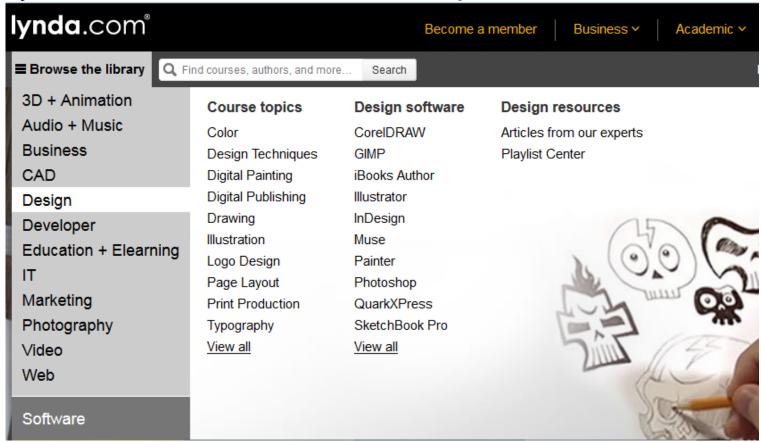
- Allows the user to explore/expand multiple subcategories simultaneously
- Presence of plus signs indicates presence of deeper levels
- Accommodates inconsistent numbers of terms per level
- Display takes up only part of screen
- Good for hierarchically deep taxonomies

### Disadvantages:

- Insufficient for displaying very large taxonomies or large numbers of terms at the same level
- May have system constraints, such as single-word labels
- More complex to develop and may take more time to load display. Not good for the web.

### Fly-out subcategories:

Lynda.com video courses www.lynda.com



### Books & authors http://books.wiseto.com

# **Books & Authors**



Enjoy more of what Books & Authors has to offer, courtesy of your local library III FIND OUT MORE >>

My Reading Room

Too many books to remember?

in your own personal Reading

No problem - just save them to a list

Room. My Reading Room lets you save and modify reading lists. reviews you've written, book lists

**BROWSE TITLES** 

**BROWSE AUTHORS** 

**BROWSE GENRES** 

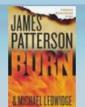
AWARD WINNERS

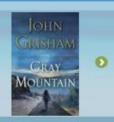


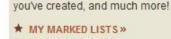
### Know What You're Going to Read Next?

Looking to curl up with a good book, but finding yourself stuck on the question of "what do I read next"? Let Books and Authors help with our expert title recommendations, reading lists, and more. Find out more in our MONTHLY HIGHLIGHTS









**★ MY BOOK LISTS** » ★ MY AUTHOR LISTS »

★ MY RATINGS & REVIEWS »

★ GO TO MY READING ROOM »



#### Seasonal Suggestions

Libraries unite this year at the ALA Midwinter Meeting

READ MORE» ABOUT THIS BOOK »



#### Spotlight On

Check out these inspirational tales for Black History Month

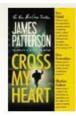
READ MORE » ABOUT THIS BOOK »



#### Best Sellers

U.S. and Canadian Bestsellers based on domestic sales.

VIEW LISTS » ABOUT THIS BOOK »



### Award Winners

The 2015 Newbery Medal went to Kwame Alexander



# Join SLA Today and Save

DX

Connecting People and Information

browse: By Genre Filter by age group: (a) adult (b) young adult (c) children's (a) all Browse by Genre: Fantasy fiction

### E F G H I J K L M N O P Q R S T U V W X Y Z

Fantasy fiction»

Adventure

Alternate History Alternate Intelligence

Alternate Universe Alternate World

Amateur Detective

Apocalyptic Horror

Anthology

Black Magic Carnival - Circus Horror

Child-in-Peril

Coming-of-Age

Contemporary

Contemporary -

Fantasy

Curse Cyberpunk Disaster Doppelganger

Dystopian

End of the World

next(V)

Erotic Horror

Espionage

Contemporary - Exotic

Contemporary Realism

Collection

Arts

Chase

Ancient Evil Unleashed

Historical fiction»

Horror stories»

Inspirational fiction»

Mystery fiction»

Popular romances»

Science fiction»

Western fiction»

popular titles: Fantasy fiction









Fairest: The Lunar Chronicles: Levana's Story (2015) Meyer, Marissa



Miramont's Ghost (2015) Hall, Elizabeth (American novelist)



Siren's Call (2015) Krentz, Jayne Ann



Sort By: Pub. Year - Desc -

Guardians of the Night (2015) Russell, Alan



Sorceress (Gray, Claudia) (2015) Gray, Claudia



The Ruby Circle (2015) Mead, Richelle



Edge of Darkness (2015)Shayne, Maggie Feehan, Christine



The Lost (Patterson, James and Raymond, Emily) (2015) Raymond, Emily Patterson, James (American novelist)



The Return (Armentrout, Jennifer L.) (2015) Armentrout. Jennifer L.



Earth Bound (2015) Feehan, Christine



Dead Heat (Briggs, Patricia) (2015) Briggs, Patricia



Ensnared (2015) Howard, A.G.







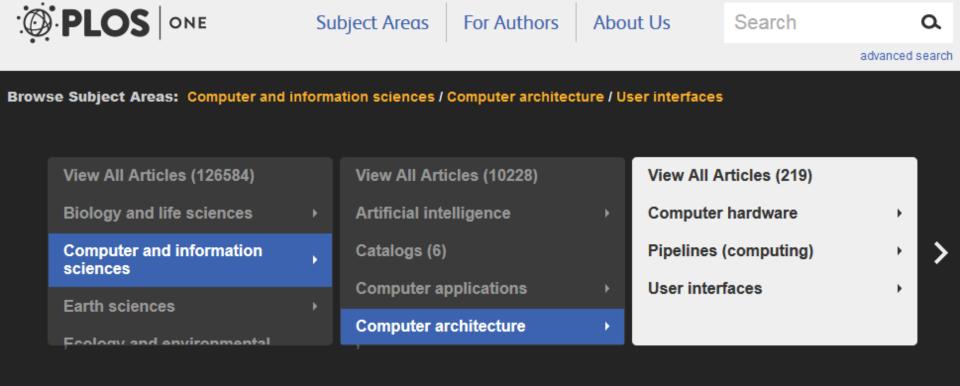








### PLOS ONE scholarly online journal www.plosone.org





# Fly-out subcategories

### Advantages:

 Users can visualize the hierarchy (see both/multiple levels) at the same time, while also seeing additional page content

### Disadvantages:

Not so suitable for multiple levels or large taxonomies



# Design options and issues:

- Breadth and depth number of levels and terms per level
- Hierarchical arrangement method
- Term names In context of broader term or unambiguous
- Top term usage As indexing terms or just labels
- Recursive retrieval Broader term additionally retrieves content indexed with all narrower terms or not



# Design options and issues: breadth vs. depth

Deep hierarchy: Many levels

```
Geographies
- North America - South America - Europe - Asia - Africa - Oceania
-- United States -- Central Asia
-- New England -- Middle East
--- Massachusetts -- South Asia
--- Boston -- Southeast Asia
---- North End
```

Broad hierarchy: Many terms per level

```
Geographies
- U.S. cities - U.S. States - Countries - World cities - Continents - Landmarks
-- Albuquerque -- Alabama
-- Anaheim -- Alaska
```



# **Outline**

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations



# **Purposes**

- To provide a browsable, detailed taxonomy where the topics don't fit into single hierarchy tree
- For browsing multiple categories at once
- For filtering/limiting large search result sets
- For guided Boolean searching



For enterprise taxonomies: Patrick Lambe,

Organising Knowledge

- People and organizations
- Things and parts of things
- Activity cycles
- Locations

For Web sites:
Rosenfeld and Morville,
Information Architecture

- Topic
- Product
- Document type
- Audience
- Geography
- Price



# Suitability

- Structured data with discernable metadata fields or database records
- Homogeneous data with similar types of characteristics (e.g. products in an e-commerce site)

# Faceted taxonomy examples

Directory of

companies

### Narrow Your Search

+ Search Within Results

### Locations Served

Arizona

Arkansas

California - North

California - South

Colorado

[+] More

### + Search Within # Miles

### Company Type

Manufacturers

**Custom Manufacturers** 

Distributors

Service Companies

Manufacturers' Reps

### + Certifications

### Ownership

Minority-Owned

Woman-Owned

Veteran-Owned

### Course

- Main Dishes (15504).
- Desserts (7530)
- Side Dishes/Vegetables
- (6182)

### ■ Show More

Convenience

### Jambalava

Real Simple, DECEMBER 2004

Weeknight Ravioli Lasagna

All You, MARCH 2009

Green Bean Casserole



★★☆☆☆

★★★★★

★★★★★

## Recipe website

Entertaining (23804)

- Make-Ahead (13917)
- Quick/Easy (13186) ■ Show More

### Cost Per Serving

- \$1 and Under (388)
- \$1.01 to \$2 (394)
- \$2.01 to \$3 (250)
- \$3.01 to \$4 (94)
- \$4.01 and Up (28)

### Cuisine

- American (28614).
- Italian (3129)
- New American (2370).
- Show More

### Main Ingredient

- Vegetables (11246)
- Fruits (6297).
- Poultry (5287)

### Dietary Consideration

- Meatless (11299)
- Low Cholesterol (7534)
- Low Saturated Fat (74444)
- **⊞** Show More

### Cooking Method

- Bake (12470).
- Food Processor (2588)
- Grill (2449).
- **⊞** Show More

### Occasion

- Summer (9512)
- Autumn (9185)

### Ravioli with Roasted Zucchini

Oxmoor House, FEBRUARY 2006

Real Simple, APRIL 2005



### Lemon-Stuffed Grilled Branzino

Food & Wine, SEPTEMBER 2009

### Smoked Trout-and-Horseradish Spread

Southern Living, DECEMBER 2008

### Artichoke, Spinach, and Feta Stuffed Shells

Cooking Light, DECEMBER 2006

□ ★★★★☆

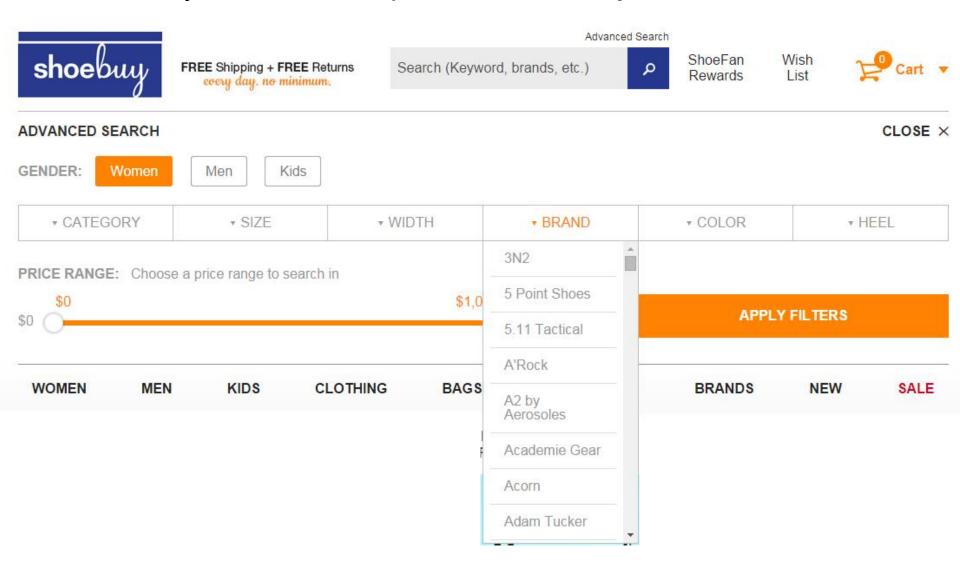
### Turkey Burgers with Grated Zucchini and Carrot

Real Simple, JUNE 2007



Format	Narrow Your Results					
Paperback (275,392)	Б.	narrow by:				
Hardcover (74,742)	Price	<ul> <li>category</li> </ul>				
Kindle Edition (35,617)	\$200 - \$249.99 (2)			Facet fea	turoc	
Audible Audio Edition (426)	\$250 - \$499.99 (8) \$500 - \$749.99 (19)	Banquet	(3)	I acel lea	แนเธอ	
Printed Access Code (987)	\$750 - \$999.99 (17)	Table				
Digital Access Code (241)	\$1000 - \$1249 (2)	Bistro Table	(9)			
Audio CD (2,653)	\$1500 - \$1999 (1)	Counter-	(7)		Classica	
Board Book (86)		height Table			Sleepwear	101 6
Author	Screen Size	Dinette Table	(2)	<u>Homepage</u> > <u>Women</u> > <u>S</u>	PJ Pals	
Future Press (10)	17" and Up (1) 15" - 16" (9)	Dining Table	(66)	SWEATERS »	Nightgowns	
Brent Schlender (1)	14" and Under (37)			SWEATERS »	Nightshirts	
Rick Tetzeli (1)	, , , , , , , , , , , , , , , , , , , ,	Kitchen Table	(4)	Cardigan »	Slippers	
Gayle Laakmann McDowell (4)	Processor Brand			Ŭ	Sleep Sets	
David Hodgson (56)	AMD (4)	Nook Table	(2)	NARROW SELECTION BY:	Steep Sets	
David S. J. Hodgson (54)	Intel® (45)	Pub Table	(31)	Size Range		
Andrew Hodges (1)	System Memory RAM ②	- shape		Show All	Refine By	Clear All
+ See more	1GB(1)	onapo		(Reg, Plus, Slim, Big & Tall, etc.)	1	Crour / tre
Book Series	2GB (4)	Novelty	(1)	(reg, rido, olim, big a rail, etc.)	Price Range	Clear
(ISC)2 Press (20)	4GB (31)	Oval	(2)	Specific Size	\$9	\$20
All-in-One (59)	6GB (8)	Rectangle	(47)	Show All	-	
☐ Barron's Ap Computer Science	8GB (4) 16GB (1)		(41)			
(5)  Prima Official Game Guides	1008(1)	Round	(53)	Color Show All	Characters	Clear
(505)	Laptop Features	Square	(21)	Show All 💠	All Characters	~
☐ Voices That Matter (111)	Touchscreen (4)	- finish		Sleeve Length		
Learning Python (1)	Backlit Keyboard (13)	illisii		Show All 💠	Clothing Sizes	Clear
Missing Manual (195)	Built-in Webcam (50)	Chrome	(10)			
+ See more	Blu-ray (2) HDMI Output (44)	Distressed	(7)	Fabric	All Clothing Sizes	~
Language	Wireless Capability (5)		(1)	Show All	Steen BederState	
☐ English (324,730)	Wireless Display (15)	Ebony	(6)		Sleep Body Style	Clear
☐ German (15,979)	Ultraportable (40)	Espresso	(20)	Style	All Sleep Body Style	~
☐ French (3,430)	ENERGY STAR Certified (41)			Show All		
Spanish (9,648)	3D-Ready (1)	Lacquered	(9)	Factured Callection	Colors	Clear
Russian (2,081)		Natural	(7)	Featured Collection		
☐ Chinese (4,579)	Operating Platform	Oak	(9)	Show All		
	Windows (48)	Out	(0)			

# Shoebuy retail site: <a href="http://www.shoebuy.com">http://www.shoebuy.com</a>



### Narrow the View >

Yellowstone Resources and Issues Guide - Astrobiology part of SERC Web Resource Collection

http://www.lpi.usra.edu/education/EPO/yellowstone2002/li...

This report explores the connection between geomicrobiology and astrobiology, explaining NASA's interest in the natural history of Yellowstone National Park. Multi-institution research teams are ...

Subject: Biology: Biology: Astrobiology, Microbiology, Ecology: Metabolism, Biology: Evolution, Diversity Resource Type: Scientific Resources: Overview/Reference Work

Extreme Environments: Extremely Hot

Grade Level: Graduate/Professional, General Public, College Upper (15-16), College Lower (13-14)

### Microbiology in Yellowstone National Park part of SERC Web Resource Collection

http://www.wfed.org/resources/reports/article5.htm

This site describes how Yellowstone National Park is a focal point for cutting-edge microbiology research and how it provides a valuable setting for outreach education.

Topics include questions for ...

Subject: Biology: Biology:Microbiology
Resource Type: Scientific Resources:Overview/Reference Work

Extreme Environments: Extremely Hot

### Eukaryotes in Extreme Environments part of SERC Web Resource Collection

http://www.nhm.ac.uk/zoology/extreme.html

This article is a compilation of information about free-living eukaryotes in extreme environments. Written in summary form, it includes anaerobes, thermophiles, psychrophiles, acidophiles, ...

Subject: Biology: Biology: Diversity, Microbiology, Biology

Resource Type: Scientific Resources: Overview/Reference Work

Extreme Environments: High Pressure, Anhydrous, Anoxic, Extremely Hot, Hypersaline, Alkaline, Acidic, Extremely Cold

Grade Level: Informal, General Public, Graduate/Professional, College Upper (15-16), College Lower (13-14), High School (9-12)

### Mono Lake Microbial Diversity part of SERC Web Resource Collection

http://www.monolake.uga.edu/reports/Mono Lake Microbial ...

This is a survey reporting the phylogenetic diversity of Mono Lake bacteria as conducted by the Mono Lake Microbial Observatory. Samples were collected from different layers of the lake and analyzed ...

# Microbial Life Educational Resources <a href="http://serc.carleton.edu/microbelife/resources">http://serc.carleton.edu/microbelife/resources</a>

### http://www.astrobio.net/news/article234.html

This article describes a permafrost subglacial lake discovered beneath Antarctica. The lake offers scientists a chance to test their sterile drilling techniques before exploring elsewhere in accept.

### Subject: Biology

313 matches General/Other Astrobiology 100 matches Biogeochemistry 136 matches

Diversity <u>157 matches</u> Ecology <u>667 matches</u>

Evolution 231 matches

Microbiology <u>900 matches</u> Molecular Biology <u>190 matches</u>

### Resource Type

Activities <u>136 matches</u>

Assessments <u>13 matches</u>
Course Information 34 matches

Datasets and Tools 32 matches

Audio/Visual 162 matches

Computer Applications <u>21 matches</u>

Pedagogic Resources <u>63 matches</u> Scientific Resources <u>771 matches</u>

Biographical Resources 4 matches

Policy Resources 14 matches

### Extreme Environments

Alkaline 60 matches

Acidic <u>65 matches</u>

Extremely Cold 61 matches

Extremely Hot 139 matches

Hypersaline <u>68 matches</u>

High Pressure 70 matches

High Radiation <u>28 matches</u>

Anhydrous <u>34 matches</u>

Anoxic <u>73 matches</u>

Altered by Humans 71 matches

### Ocean Environments

Coastal and Estuarine <u>195 matches</u> Shallow Sea Floor/Continental Shelf <u>32</u> matches

Deep Sea Floor/Abyssal 46 matches

Burface Waters <u>91 matches</u>

Deep Waters <u>29 matches</u>

### Grade Level

Primary (K-2) 22 matches

Subject: Biology showing only Biology > Ecology > Habitats L Show all Subject: Biology

Resource Type showing only Audio/Visual > Images/Illustrations & Show all Resource Type

Extreme Environments showing only Extremely Hot L Show all Extreme Environments

Ocean Environments showing only Deep Sea Floor/Abyssal L Show all Ocean Environments

Grade Level showing only Middle (6-8) L Show all Grade Level

### Results 1 - 7 of **7 matches**

### Sea Vent Viewer part of SERC Web Resource Collection

http://www.nsf.gov/news/overviews/earth-environ/interact...

This web site serves as an educational overview of National Science Foundation (NSF) earth and environmental science research focusing on hydrothermal vent systems. It

features an interactive viewer ...

Subject: Biology: Biology:Ecology:Habitats:**Benthic,** Biology:**Diversity,** Ecology:Habitats:**Marine,** Biology:**Microbiology** 

Resource Type: Audio/Visual:Images/Illustrations, Scientific Resources:Overview/Reference Work,
Audio/Visual:Animations/Video

Extreme Environments: High Pressure, Extremely Hot

Ocean Environments: Deep Sea Floor/Abyssal:Hydrothermal Systems

Grade Level: Primary (K-2), Intermediate (3-5), College Lower (13-14), High School (9-12), Middle (6-8),

Graduate/Professional, College Upper (15-16), General Public, Informal

We're in Hot Water Now: Hydrothermal Vents part of SERC Web Resource Collection

http://www.nationalgeographic.com/xpeditions/lessons/07/...

In this National Geographic lesson, students will use National Geographic's Yellowstone internet module to learn about the processes that drive geysers. The activity involves

learning about ... Subject: Biology: Biology:Ecology:S<mark>ymbiotic Relations,</mark> Symbiotic Relations:**Mutualism,** Biology:Ecology:**Metabolism,** Habitats:Marine, Biology:Diversity, Ecology:Habitats:Benthic,

Biology: Microbiology, Evolution

Resource Type: Computer Applications, Activities:Lab Activity, Audio/Visual:Images/Illustrations,

Activities:Classroom Activity

Extreme Environments: Extremely Hot, High Pressure

Osaba Equiropmonto: Doon Coo Floor/Abuccali Hudrothormal Custome

### Narrow the View 🕏

Subject: Biology Show all Subject: Biology

Biology > Ecology > Habitats

Marine <u>7 matches</u>

Benthic 7 matches

Resource Type Show all Resource Type

<u>Audio/Visual</u> > Images/Illustrations 7 matches

Extreme Environments Show all Extreme

Extremely Hot

7 matches

Ocean Environments <u>Show all Ocean</u>

Deep Sea Floor/Abyssal

1 match General/Other
Hydrothermal Systems 7 matches

Grade Level Show all Grade Level

Middle (6-8)

7 matches



# Advantages

- Supports more complex search queries by users
- Allows users to control the search refinement, narrowing or broadening in any manner or order

# Disadvantages

- Only suitable for somewhat structured, unified type of content that all share the same multiple facets
- May not support "advanced search" of multiple terms selected at once ("or") from the same facet
- Requires investment of thorough indexing/tagging



# Design options and issues

- Facets as post-search filters only or also/instead as initial browse
- Display of partial/start of list of values within a facet
- Ability to select multiple values from within the same facet at once with check boxes
- Inclusion of other metadata (not "taxonomy") in the same set of facets (date, author, document type, etc.)
- Have all generic facets or also category-specific facets
- Designating kinds of topics into different facets



# **Facet Design Tips**

- Number of facets: 4-8, with 5-6 as ideal
- Facets listed in logical, not alphabetical order
- Number of terms per facet: 2-25
  - > Ideally not much more than viewed in a scroll box
  - > If the list is obvious (US states), then more is OK.
  - Exception can be made for hierarchical "Topics" facet
- Within facets, if <12 terms, then a logical display order, if >12 terms, then alphabetical
- A two-level hierarchy (indented) within a facet is possible



# **Outline**

- 1. Taxonomy Definitions and Types
- 2. Term Displays
- 3. Hierarchies
- 4. Facets
- 5. Hierarchy-Facet Combinations



# **Hierarchy-Facet Combinations**

When facets are useful, but topics are too many and are best displayed in a hierarchy

- Have hierarchies within facets: indented display
   World Bank documents advanced search
   <a href="http://documents.worldbank.org/curated/en/docadvancesearch">http://documents.worldbank.org/curated/en/docadvancesearch</a>
- 2. Start with hierarchical categories, then limit with facets

Target <u>www.target.com</u>

Buzzillions product reviews <u>www.buzzillions.com</u>

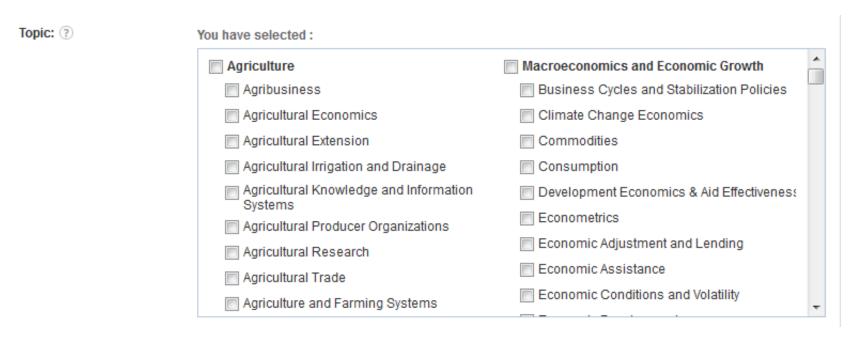


# Hierarchy-Facet Combinations

Hierarchies within facets

World Bank documents advanced search

http://documents.worldbank.org/curated/en/docadvancesearch



_	Books		
	Arts & Photography (1,431,273)		
	Biographies & Memoirs (524,534)		
2 6	Business & Money (1,958,449)		
2. b	Calendars (204,227)		
Start with hierarchical	Children's Books (1,323,066)		
	Christian Books & Bibles (709,029)		
categories and have	Comics & Graphic Novels (393,966)		
facets available from	Computers & Technology (433,843)		
the top level	Cookbooks, Food & Wine (204,080)		
Amazon.com	Crafts, Hobbies & Home (441,381)		
, <del>.</del> .	Education & Teaching (845,892)		
(shop by Department)	Engineering & Transportation (748,729)		
www.amazon.com/gp/	Gay & Lesbian (88,492)		
site-	Health, Fitness & Dieting (671,090)		
	History (3,585,297)		
directory/ref=nav_shop	Humor & Entertainment (640,144)		
all btn	Law (575,784)		
	Literature & Fiction (3,112,668)		
	Medical Books (790,683) Mystery, Thriller &		
	Suspense (308,974)		
	Parenting & Relationships (179,354)		
	Politics & Social Sciences (1,641,616)		
	Reference (4,150,593)		
	Religion & Spirituality (1,312,142)		
	Romance (588,702)		
	Science & Math (1,537,475)		
	Science Fiction & Fantasy (350,771)		
	Self-Help (345,201)		
	Sports & Outdoors (266,667)		
	Teen & Young Adult (220,550)		
	Travel (425,744)		
	Refine by		
	Format	(1)	
	Paperback (27,337,676)	_	
	1 aperback (21,001,010)		

# 20

```
Coming Soon (1,346)
                                        Platform
 Platform
                                         Windows (3,778)
   Windows (39,776)
                                         Linux & Unix (253)
  Macintosh (6,895)
                                         Macintosh (242)
  Linux & Unix (6.853)
                                         iPhone & iOS (20)
  iPhone & iOS (2.337)
                                         Android (13)
   Android (1,107)
 Audience
                                        Audience
   Beginners & Seniors (42,495)
                                         Beginners & Seniors (1.830)
   Advanced & Power
                                         Advanced & Power
    Users (17,023)
                                         Users (2,456)
   Kids & Teens (7,126)
                                         Kids & Teens (57)
< Books
                                       Books
 Computers & Technology
                                       Computers & Technology
   Business Technology (40,281)
                                       Databases & Big Data
   Certification (21.536)
                                         Access (1,827)
   Computer Science (75,085)
                                         Data Mining (3,223)
   Databases & Big Data (27,137)
                                         Data Modeling &
   Digital Audio, Video &
                                         Design (2,087)
    Photography (15,637)
                                         Data Processing (7,673)
   Games & Strategy
                                         Data Warehousing (937)
    Guides (12.176)
                                         MySQL (382)
   Graphics & Design (50,931)
                                         Oracle (1.549)
   Hardware & DIY (34,427)
                                         Other Databases (1.930)
  History & Culture (3,174)
                                         Relational Databases (960)
  Internet & Social Media (34,934)
                                         SQL (2.402)
  Mobile Phones, Tablets &
    E-Readers (4,523)
  Networking & Cloud
                                       Refine by
    Computing (71,137)
   Operating Systems (23,482)
                                       Format
   Programming (139,790)
                                       Paperback (19.530)
   Security & Encryption (12,932)
                                       Hardcover (4.914)
   Software (82,119)
                                       Kindle Edition (1.282)
   Web Development &
                                       Audible Audio Edition (3)
    Design (37,154)
                                       Printed Access Code (154)
                                       Digital Access Code (35)
                                        Audio CD (2)
 Refine by
                                        Author
 Format
                                        Steve Krua (1)
 Panerhack (27/1 006)
```

New Releases

Show results for

Last 30 days (2,473)

Last 90 days (8,480)

**New Releases** 

Show results for Show results for **New Releases** Last 30 days (114) Last 30 days (26) Last 90 days (394) Last 90 days (84) Coming Soon (177) Coming Soon (60) Platform Windows (87) Linux & Unix (6) Macintosh (5) iPhone & iOS (2) Android (1) Audience Beginners & Seniors (81) Advanced & Power Users (586) Kids & Teens (4) < Books < Computers & Technology Contabases & Big Data Data Mining Refine by Format Paperback (2.238) Hardcover (764) Kindle Edition (104) Audible Audio Edition (2) Printed Access Code (2) Author Foster Provost (1) Tom Fawcett (1) J. H. Friedman (2) Robert Tibshirani (2)

Itzik Ben-Gan (4)

+ See more

**Book Series** 

Jared P. Lander (1)

John W. Foreman (1)

Addison-Wesley Data &

Analytics Series (7)

For Dummies (4)



# Taxonomy Resources

"Taxonomies & Controlled Vocabularies" 5-week online workshop, Simmons College, School of Library and Information Science, Continuing Education Program. Next in July 2015. http://alanis.simmons.edu/ceweb/workshop.php?id=224

"Practical Taxonomy Creation" 3 one-hour video-recorded webinar series, American Society for Indexing <a href="https://www.asindexing.org/online-learning/taxonomy-hedden">www.asindexing.org/online-learning/taxonomy-hedden</a>

The Accidental Taxonomist (Information Today, Inc., 2010) <a href="http://books.infotoday.com/books/TheAccidentalTaxonomist.shtml">http://books.infotoday.com/books/TheAccidentalTaxonomist.shtml</a>

http://www.hedden-information.com/presentations.htm http://accidental-taxonomist.blogspot.com



# Questions on taxonomy display?

# Contact

Heather Hedden Carlisle, MA www.hedden-information.com heather@hedden.net