Taxonomy Displays
Bridging UX & Taxonomy Design

Content Strategy Seattle Meetup
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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
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1. Taxonomy Definitions and Types
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Taxonomy Definitions and Types

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 Definitions and Types

Taxonomy

1. 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
Taxonomy Definitions and Types

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.
Taxonomy Definitions and Types

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
Taxonomy Definitions and Types

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.
Taxonomy Definitions and Types

Taxonomy - Hierarchical

Has broader term/narrower term relationships that include all terms to create a hierarchical structure
Taxonomy Definitions and Types

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
Taxonomy Definitions and Types

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”) / non-preferred term (use) (USE/UF)
- Also supports notes, such as scope notes (SN), for terms, as needed
- In accordance with ANSI/NISO Z.39.19-2005 standards

Thesaurus entry example

materials acquisitions
- UF acquisitions (of materials)
  - library acquisitions
- BT collection development
- NT accessions
  - approval plans
  - gifts and exchanges
  - materials claims
  - materials orders
  - subscriptions
- RT book vendors
  - jobbers
  - subscription agencies
  - subscription cancellations
### Taxonomy Definitions and Types - Summary

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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
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Hierarchies

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 \textit{and} what is tagged to each on of its narrower terms, all together.)
Hierarchies

Best practices for relationships: ANSI/NISO Z39.19

Types:
1. **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
Hierarchies

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
Hierarchies

Hierarchical display options

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

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
Hierarchies

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
Hierarchies

Expandable tree

USA Today

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

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.
Hierarchies

Fly-out subcategories:

Lynda.com video courses [www.lynda.com](http://www.lynda.com)
Hierarchies

PLOS ONE scholarly online journal www.plosone.org
Hierarchies

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
Hierarchies

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
Hierarchies

Design options and issues: breadth vs. depth

Deep hierarchy: Many levels

Geographies
- North America
  -- United States
  --- New England
  ---- Massachusetts
  ----- Boston
  ------ North End

- South America
- Europe
- Asia
- Africa
- Oceania
  --Central Asia
  --Middle East
  --South Asia
  --Southeast Asia

Broad hierarchy: Many terms per level

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

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Facets

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
Facets

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
Facets

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
Shoebuy retail site: http://www.shoebuy.com
Microbial Life Educational Resources
http://serc.carleton.edu/microbelife/resources

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 search.
Sea Vent Viewer part of SERC Web Resource Collection
http://www.nsf.gov/news/overview/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 ...
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 ...
Resource Type: Computer Applications, Activities:Lab Activity, Audio/Visual:Images/Illustrations, Activities:Classroom Activity
Extreme Environments: Extremely Hot, High Pressure
Ocean Environments: Deep Sea Floor/Abyssal:Hydrothermal Systems
Facets

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
Facets

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
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

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Hierarchy-Facet Combinations

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

1. Have hierarchies within facets: indented display
World Bank documents advanced search

2. Start with hierarchical categories, then limit with facets
Target www.target.com
Buzzillions product reviews www.buzzillions.com
Hierarchy-Facet Combinations

Hierarchies within facets
World Bank documents advanced search
2. b
Start with hierarchical categories and have facets available from the top level Amazon.com (shop by Department)
www.amazon.com/gp/site-directory/ref=nav_shop_all_btn
Taxonomy Resources

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

“Practical Taxonomy Creation” 3 one-hour video-recorded webinar series, American Society for Indexing [Link](www.asindexing.org/online-learning/taxonomy-hedden)

_The Accidental Taxonomist_ (Information Today, Inc., 2010) [Link](http://books.infotoday.com/books/TheAccidentalTaxonomist.shtml)

[Link](http://www.hedden-information.com/presentations.htm)
[Link](http://accidental-taxonomist.blogspot.com)
Questions on taxonomy display?

Contact

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