Semantic Searching: Making Web Searches Smarter



BEBO WHITE
SOMEWHERE NEAR CAPE HORN
MACMANIA11
FEBRUARY 9, 2011

Caveats

- I'm not a Mac expert...why do Neil and Theresa keep asking me?
- I'm more of a token
 - Academic
 - Provocateur
 - Artifact
- I love talking and brainstorming about new and future technologies
- I've got nothing to do with Bebo.com

Why Do You Use Google?

- How do you know it's the best? (Hype? Pages indexed? Algorithm?)
- Do you use advanced search? (Do you know how?)
- Do you ever look beyond the first 2~3 response pages? (Do you know what the long tail is?)
- Is it because you want "one-stop searching?"
- How important is large database vs. speed vs. convenience vs. accuracy?

What Does Semantic Mean?

What Does Semantic Mean?

• "Relating to meaning in language or logic"





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Patagonia (disambiguation)

From Wikipedia, the free encyclopedia

Patagonia may refer to:

- Patagonia, a region of South America
- Patagonia, Arizona, United States
- Patagonia Lake in Arizona
- · Patagonia (clothing), an outdoor clothing and gear company
- Patagonia (film), a 2010 film
- ARA Patagonia, an AOR supply ship of the Argentine Navy



This disambiguation page lists articles associated with the same title.

If an internal link led you here, you may wish to change the link to point directly to the intended article.

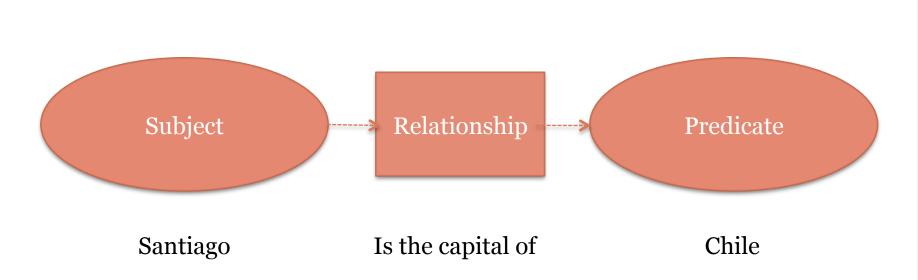
Categories: Disambiguation pages

Trends in Searching 2009-2011

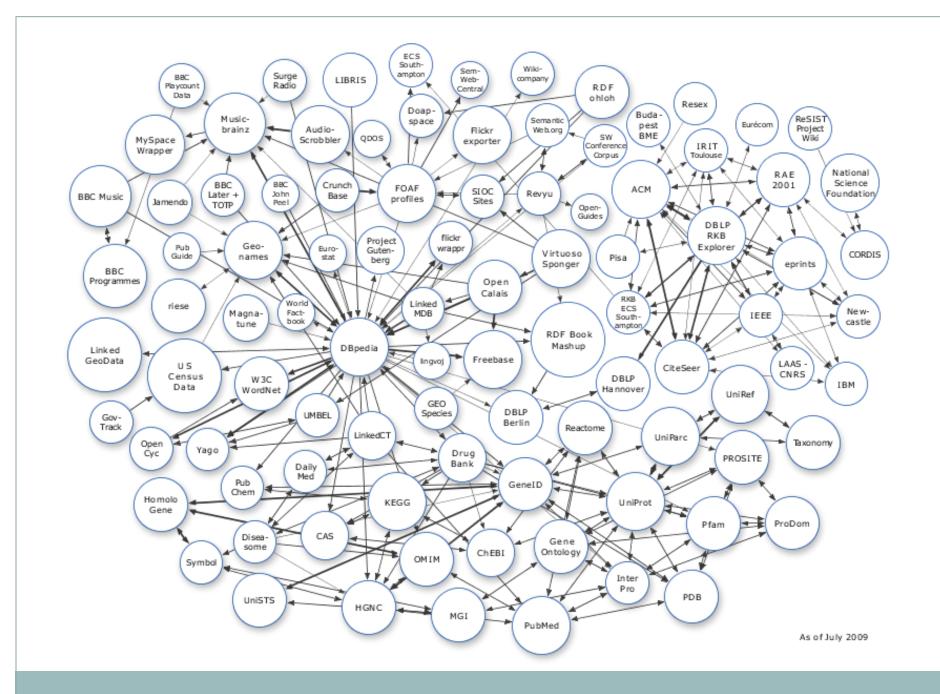
- The Web as a document management system
- Vertical Search
- Universal Search
- Discovery Search
- Social Search
- Real Time Search
- Semantic Web
- Semantic Search

- Connected Mobility
- Focus on Consumers
- Information Democracy
 - Social Context
 - Social Search
 - Social Interaction
- Information Monopolies
- Manipulating
 - Keywords
 - Meaning
 - o People

Expressing Semantics



- called a "triple"
- included in metadata and referenced with a URI
- based upon a vocabulary
- can be expressed using RDF or RDFa
- not recognized by many search indexers



Just Think About

- The ability to *intelligently* search this content...
- To turn *facts/data* into knowledge



What is Semantic Search? (1/2)

- What is "the meaning of meaning?"
 - "He who knows does not speak, he who speaks does not know"Lao Tse
 - "It depends on what the meaning of the word 'is' is" Bill
 Clinton
 - o "the answer, my friend, is blowin' in the wind" Bob Dylan
- Beyond "advanced searching" on search engines

What is Semantic Search? (2/2)

- Semantic search is
 - o a search
 - o a question, or
 - o an action
- that produces meaningful results even when the retrieved item
 - o contain **none of the query terms**, or
 - o the search involves **no query text** at all
- The goal is "to improve upon traditional search methods by exploiting semantic metadata"
- Related to but not exclusive to "the Semantic Web"

What Makes a Search Semantic?

- Handling morphological variations
- Handling synonyms with correct senses
- Handling generalizations
- Handling concept matching
- Handling knowledge matching
- Handling natural language queries and questions
- Ability to point to uninterrupted paragraph and the most relevant sentence
- Ability to enter queries freely, no special formats like quotes or Boolean operators
- Ability to operate without relying on statistics, user behavior, and other artificial means
- Ability to detect its own performance

What Should Semantic Search Queries Look Like?

- A natural language question
- A triple representation of a question
- A graphical representation
- Keywords, phrases, etc.

Ideal Results of a Semantic Search

- A balanced overview
- A neutral overview
- A realistic overview
- A personalized overview



patagonia

Search

×

Ad

About 32,400,000 results (0.16 seconds)

Advanced search

🛂 Everything













Any time

Latest

Past 24 hours

Past week

Past month

Past year

Custom range...

All results

Sites with images

Wonder wheel

Related searches

Timeline

Visited pages

Related searches

Related searches for patagonia:

north face patagonia sale rei marmot mountain hardware patagonia outlet II bean columbia sierra trading post lands end patagonia map ems patagonia argentina mooseiaw zappos prana mountain hardwear cloudveil patagonia clothing icrew

Patagonia®: Official Site

Check out **Patagonia**'s San Fransisco Store. Shop Clothing, Gear & More! www.patagonia.com

Patagonia Outdoor Clothing, Apparel and Gear for Climbing, Hiking ... 🕸 🔍

Patagonia clothing company is a designer of outdoor clothing and gear. We make organic cotton clothing, sportswear, travel clothing, technical Regulator® ...

www.patagonia.com/ - Cached - Similar

Men's Find Patagonia

Women's Travel Gear: Luggage, Packs, Totes ... Web Specials Patagonia Job Listing for Ventura ...

Kids Ski/Snowboarding

More results from patagonia.com »

Places for patagonia near San Jose, CA





patagonia map

Search

About 4,890,000 results (0.15 seconds)

Advanced search



Images



News





More

Any time

Latest

Past 24 hours

Past week

Past month

Past year

Custom range...

All results

Sites with images

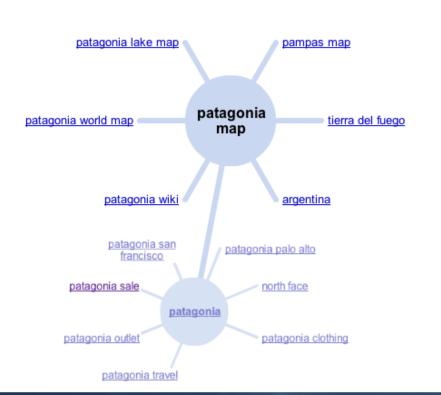
Wonder wheel

Related searches

Timeline

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Not yet visited



Wonder wheel

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Patagonia Map @ National Geographic Magazine ☆ Q

Patagonia Map. Land's End About twice the size of France—but with fewer people per square mile than Western Sahara—Patagonia remains remote more than a ... ngm.nationalgeographic.com/ngm/0401/feature3/map.html - Cached - Similar

Free Printable Maps: Patagonia Map 🕸 🔍

Jul 22, 2009 ... Below you can select a **Patagonia map** that you think will be helpful for your reference or travels.



Figure 1. Real-time search engine TipTop combines language technologies with search to classify Twitter results into positive responses (green), negative responses (red), and other opinions (blue).



chicken recipe

Find

WEE

RECIPE

VIDEO

CHOICES

Difficulty Level

Easy (5,286) Medium (1,783) Difficult (95)

Meal

Breakfast (121) Lunch (1,752) Dinner (2,249) Brunch (127)

Main Ingredient

Bacon (642) Beans / Legumes (776) Beef (732) ... more

Total Time

Less than 20 mins (7,132) 20 to 45 mins (19,238) 45 mins to 2 hrs (17,983) Over 2 hrs (6,284)

Dietary Option

Dairy-free (8)
Diabetic (1,418)
Egg-free (1,124)
... more

Type Of Dish

Bread (90) Chicken/Poultry (495) Chili (116)

... more

Cuisine

American (10,993) Asian (2,942) Australian (501) 1 - 15 of 69,704 results

Touchdown Tequila Chicken Recipe

Difficulty Level: Easy . Servings: 8 . Cuisine: American

In a bowl, combine lime juice, tequila, triple sec, cilantro, garlic and red pepper flakes. Add chi marinate chicken for 3 hours or overnight (depending on how much you like the tequila flavor peppers and onion in Vegetable Marinade for 30 minutes to 1 hour....

www.foodnetwork.com/recipes/food-network-challenge/tou...index.html

Ellens Chicken Recipe

Servings: 4 . Cuisine: Asian

This **chicken recipe** is from a cookbook a group I belong to (Ellen submited this one) put out money - it was a huge success and I get inspiration from it weekly. This is by far my families fa smell while its cooking is unbelievably good! I generally use...

www.recipezaar.com/Ellens-Chicken-Recipe-348165

Caribbean Jerk Chicken Recipe

Difficulty Level: Medium • Meal: Lunch • Servings: 4 • Cuisine: Caribbean

Preheat grill to medium-high heat and oven to 500 degrees F. Combine all dry ingredients in a aside. Rinse **chicken** with cold water and pat dry. Dip in red wine, then in dry seasonings. Pla preheated grill and cook for 5 to 8 minutes. Finish in the preheated oven...

www.foodnetwork.com/recipes/rachael-rays-tasty-travels/.../index.html

Test Ala Chicken Recipe

Servings: 4 servings skin chicken and place in batter www.chow.com/recipes/11337

peasant chicken Recipe

Difficulty Level: Medium . Servings: 4 servings . Cuisine: Middle Eastern

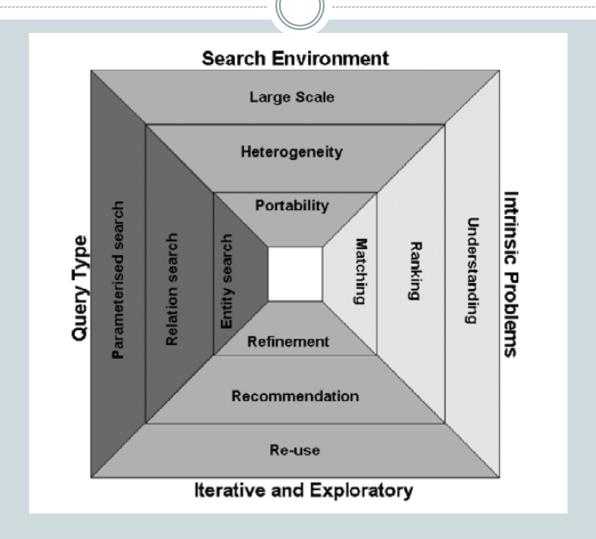
I had this first in a small middle eastern restaurant in Virginia Beach, Va which no longer exists cinnamon flavors the **chicken** with a wonderful aroma and it seemed easy to recreate. I have many times. I looked for the **recipe** on line, but never found this...

www.chow.com/recipes/11720

Colon Objeton Boots

... more

Requirement Spaces for Semantic Searches



(from "Knowledge Engineering Review")

Getting You Started Into Semantic Searching

Kngine Movies Kngine Music Kngine Stats Explorer Page Add Kngine to Chrome



Patagonia	Search Go

Good news for Movies and Music fans!

Check this out

IPhone 4 vs Google Nexus ... Alice in Wonderland ... Best mortgage ... Top Box Office
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Patagonia

Web Photos

Search Go



Patagonia Patagonia, Inc. Patagonia (Movie)

Information

Share

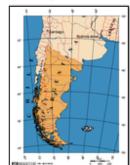








Patagonia



region, location

Patagonia is a geographic region containing the southernmost portion of South America. Located in Argentina and Chile, it comprises the Andes mountains to the west and south, and plateaux and low plains to the east. The name Patagonia comes from the word patagon used by Magellan to describe the native people who his expedition thought to be giants. It is now believed the Patagons were actually Tehuelches with an average height of 1.80 m (~5'11") compared to the 1.55 m average for Spaniards of the time. To the east of the Andes, it lies south of the Neuguén River and Colorado rivers, and, to the west of the Andes. south of (39°S), excluding the Chiloé Archipelago.

Location:

Contains: Pali-Aike Volcanic Field, Torres Del Paine National Park, Palena Province, Aysen Region, Water Resources Management In Chile, Cerro Torre, Monte San Valentin, Lago Porteno, Palena/General Vintter Lake, Magallanes Province, Guti?_rrez Lake, Buenos Aires/General Carrera Lake, Cerro Chalt? n, Tierra Del Fuego Province,

> Patagonian Desert, Neugu? n Province, Santa Cruz Province, Zona Austral, Monte



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Leading Semantic Search Technology



What is Semantic Search?

10 points of differentiation from keyword indexing



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search

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Patagonia



Patagonia	(search
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Web

Credible

Patagonia - Wikipedia, the free encyclopedia

Physical geography The flat plains of **Patagonia**, near Fitz Roy, Santa Cruz, Argentina. See also: Geography of Argentina and Geography of Chile **Patagonia** is for the most part a region of vast steppe-like plains, rising in a succession of abrupt terraces about 100 metres (330 ft) at a time, and covered with an enormous bed of shingle almost bare of vegetation. In the hollows of the plains are ponds or lakes of brackish and fresh water. Towards the Andes the shingle gives place to porphyry, granite, and basalt lavas, animal life becomes more abundant and vegetation more luxuriant, acquiring the characteristics of the flora of the western coast, and consisting principally of southern beech and conifers. The high rainfall against the western Andes and the low sea surface temperatures offshore give rise to cold and humid air masses, contributing to the ice-fields and glaciers, the largest ice-fields in the Southern hemisphere outside of Antarctica.

http://en.wikipedia.org/wiki/Patagonia

Patagonia - Wikipedia, the free encyclopedia

Patagonia, as most commonly defined (in orange). Patagonia is a geographic region containing the southernmost portion of South America. Mostly located in Argentina and partly in Chile, it comprises the Andes mountains to the west and south, and plateau and low plains to the east. The name Patagonia comes from the word patagonAntonio Pigafetta, Relazione del primo viaggio intorno al mondo, 1524: "Il capitano generale nominò questi popoli Patagoni." The original word would probably be in Magellan's native Portuguese (patagão) or the Spanish of his men (patagón). It has been interpreted later as "big foot" but the etymology is unclear, used by Magellan to describe the native people who his expedition thought to be giants. It is now believed the Patagons were actually Tehuelches and Aonikenk with an average height of 1.80 m (~5'11") compared to the 1.55 m (~5'1") average for Spaniards of the time.

Patagonia

Patagonia **I**



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Patagonia Official Site

Browse Gear & Clothing Online or Check Out Our Palo Alto Store. www.patagonia.com

Articles

The Kosmix Community

Patagonia is a company that specializes in the design, development, and sale of rugged clothing for outdoor activity along with outdoor gear. The store was the brainchild of Yvon Chouinard who founded it in 1972 as a way to expand his business of supplying climbing gear. They created a line of clothing for outdoor enthusiasts that included innovations like double layering and water proof technology.

Patagonia has extensive lines of clothing for outdoor adventuring and everyday wear. They market and sell down coats and jackets, sweaters, fleece lined and insulated clothing,

... see more

Snapshot

Reference from Wikipedia

Patagonia

Patagonia is a geographic region containing the southernmost portion of South America. It is located in Argentina and Chile, integrating the







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- Pampa
- Patagonia (Argentina) and Chile)
- Tierra del Fuego





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Patagonia, a region of South America



Patagonia, Arizona, United States



Patagonia Lake in Arizona



Patagonia (clothing), an outdoor clothing and gear company



Patagonia (film), a 2010 film



ARA Patagonia, an AOR supply ship of the Argentine Navy

Patagonia Outdoor Clothing, Apparel and Gear for Climbing, Hiking ...

Patagonia clothing company is a designer of outdoor clothing and gear. We make organic cotton clothing, sportswear, travel clothing, technical Regulator® and Synchilla ... patagonia.com

w Patagonia - Wikipedia, the free encyclopedia

Patagonia is a geographic region containing the southernmost portion of South America. It is located in Argentina and Chile, integrating the southernmost section of the Andes ... en.wikipedia.org/wiki/Patagonia

Patagonia

A staple character in Sydney's northern beach lineup, Patagonia team rider Banjo Mclachlan, with

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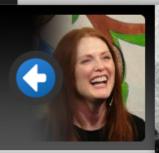




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...colored rubber boots. Even as the crowd pretends to overlook a fashion "practicality" like rubber boots-or my Patagonia puffy down coat-the middle road of changing from big winter...

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Entrepreneurs target millennial wine drinkers



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Did You Mean?

Patagonia Desert

Patagonia Clothing Company

In Patagonia Book

Río Gallegos, Santa Cruz City

Merrell Clothing Company

Mitsubishi Pajero Vehicle

Bruce Chatwin Author

Tetro Film

Yvon Chouinard Athlete

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Senator Yee Condemns Rush Limbaugh's Racism: More Than 7,000 Names on Online Petition

...signed an online petition posted by Senator Leland Yee (D-San Francisco) on his website to condemn Rush Limbaugh for offensive comments he recently made during his radio program. The...

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FEATURED STORY

Asian-American lawmakers demand Limbaugh apology (AP)



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Senator Yee Condemns Rush Limbaugh's Racism: More Than...

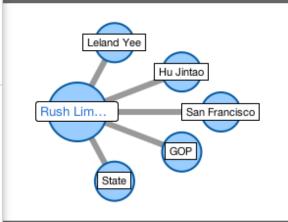
Overachievement in the genre of hatefulness... makes me ske...

Media Matters staff: AP: Boycott Over Limbaugh's Mockery O...

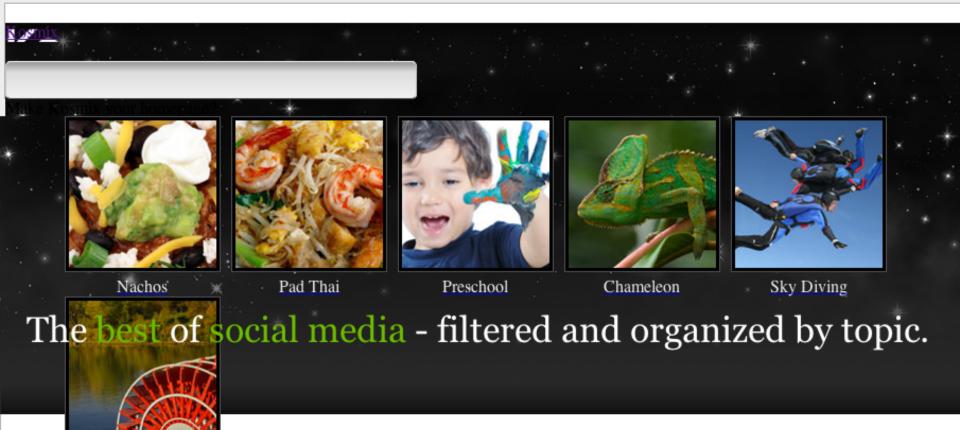
ADL Condemns Racist Faxes Sent to California State Senator ...

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- Vera Duckworth
- Children's Tylenol Cold
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Your green search engine



Search Examples

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- ✓ Car
- Clothing
- Diapers
- √ Fashion
- Lawn Care
- Generators
- ✓ Toilets
- Kyoto
- Sun
- Carbon dioxide
- Soil

Latest Green News

The Daily Green

Obama's Repeal of "Global Gag Rule" Paved Way for Family Planning Aid

Recall of Toxic Waste-Brand Children's Chew Bars Expands

Latest Toxic Toy Recalls: Lead and Cadmium in Toys

Walmart Cancels Plans to Build at Civil War Battlefield, a Top 10 Endangered Vacation

Nominate Your Local Hero!

Highlights from the 2010 Heart of Green Awards (VIDEO)

Oscar Nomination for Sun Come Up , on Climate Refugees

EcoGeek

Wind Power Cost Competitive with Natural

Yahoo! Green News

Utah mayors express concern over pipeline restart

Iraq water shortages raising ethnic tensions

New Canada environment minister offers no new plans

Candy maker recalls Nuclear Sludge chew bars

Africa's Lone Wolf: New Species Found in Ethiopia

US probing Gulf blowout preventer testing flap

India's Suzlon wins \$1.28 bn wind power



what is the population density of tierra del fuego



Assuming "tierra del fuego" is a class of islands | Use as an administrative division instead











Input interpretation:

Tierra del Fuego population density

Result:

2 people per square mile

Unit conversion for median population density 2 people per square mile:

0.7722 people per square kilometer

Computed by Wolfram Mathematica

Source information »

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what is the population density of tierra del fuego



A WOLFRAM WEB RESOL

Assuming "tierra del fuego" is a class of islands | Use

Input interpretation:

Tierra del Fuego population density

Result:

2 people per square mile

Unit conversion for median population density 2 peopl

0.7722 people per square kilometer

Computed by Wolfram Mathematica

Source inform

Source information

Island data source information

- ▼ Primary source:
 - Wolfram|Alpha knowledgebase, 2011.
- ▼ Background sources and references:
 - Aubuchon, V. "Worlds 20 Largest Islands." Vaughn's Summaries. »
 - Brooks, L. Islands of the World: Names of over 5,000 Islands and Island Groups. 1960.
 - Calder, J. WorldIslandInfo.com. »
 - Huxley, A. J. Standard Encyclopedia of the World's Oceans and Islands. Putnam Publishing Group, 1962.
 - United Nations Environment Programme. "Island Directory." Islands. »
 - United States National Geospatial-Intelligence Agency. GEOnet Names Server (GNS). »
 - Wick, M. GeoNames. »
 - The Wikimedia Foundation, Inc. Wikipedia. »

Conclusions

- Semantic search is necessary why grope in the dark when you search? – you use the right tool for what you want to accomplish, why not for search?
- Search engines/indexers/information users will need to incorporate semantic technology (you can make your Web sites sensitive to semantic searching)

Thank You!

BEBO@SLAC.STANFORD.EDU