### Connecting The Probable Dots

Disambiguating strategies for entity oriented search and natural language understanding

#### Dawn Anderson







The probability of rolling an even number or an odd number is 1:2



This is an example of 'equiprobability'

## Since both odds and evens are equiprobable outcomes





"Assigns equal probabilities to outcomes when they are judged to be equipossible" (Wikipedia)





In URLs, content, locations & entities equiprobability can be problematic

When one of a number of pluralities equally meets an information need











This could be duplicate content or 'ambiguity in entities'



Equiprobability is like 'See saw SEO'

### LaPlace's Principle of Indifference



#### la places principle of indifference















More

Settings

Tools

About 8,260,000 results (0.53 seconds)

#### Principle of indifference philosophy

The **principle of indifference** states that in the absence of any relevant evidence, agents should distribute their credence (or 'degrees of belief') equally among all the possible outcomes under consideration. In Bayesian probability, this is the simplest non-informative prior.

en.wikipedia.org > wiki > Principle of indifference

Principle of indifference - Wikipedia

Search for: Principle of indifference philosophy



About Featured Snippets



Feedback

Where there is equipossibility there is a need for further confirmations

Further 'confirmations' beyond the same content or surface form must be sought



Where two or more domain assets, surface forms, or entity determinations are considered equal a representative is 'the chosen one' (canonical)



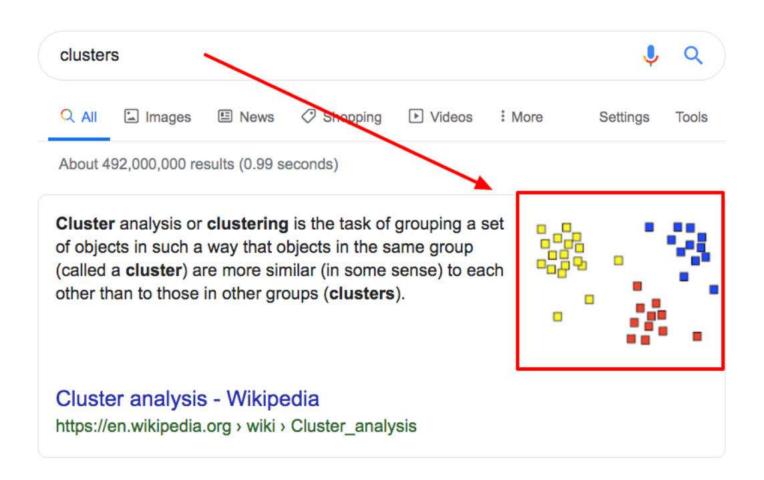




**Nearest Neighbours** 



## All the pluralities are clustered together and one is picked



Sometimes 'bits' are picked from multiple 'equiprobable outcomes'

#### Near Duplicate Content Can Cause Google to Choose Wrong Snippet

MARCH 14, 2017 AT 6:30 AM PST BY JENNIFER SLEGG

#### **TheSEMPost**

Near Duplicate Content Can Cause Google to Choose Wrong Snippet

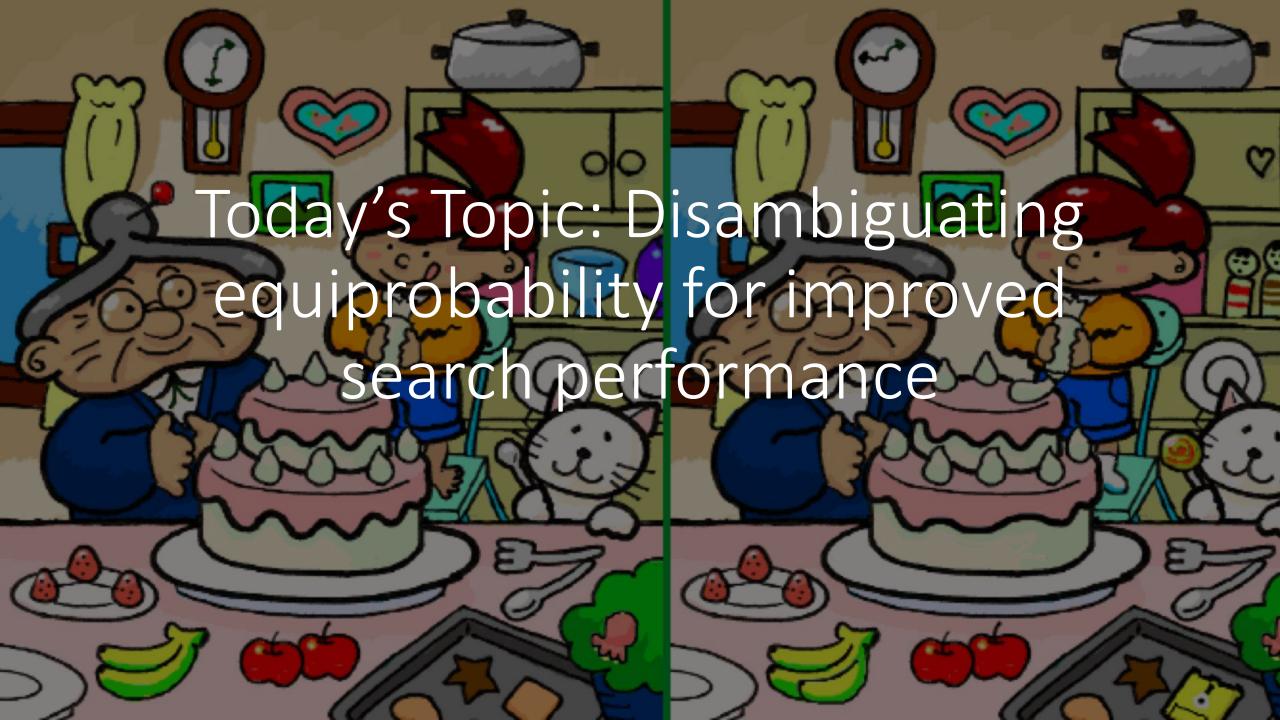














11+ years SEO & Digital Marketing Consultant

& Pracademic:





Contributor:

Search Engine Land







Speaker & Trainer:























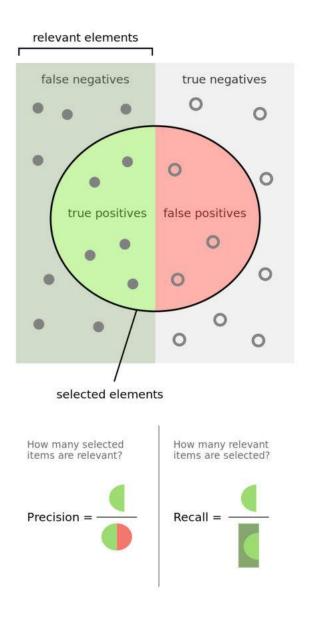
- in linkedin.com/in/msdawnanderson
- @dawnieando
- dawn.anderson@@move-itmarketing.co.uk
- move-it-marketing.co.uk



Meet Bert & Tedward



In an ideal world 'precision' and 'recall' would be perfect... but... it's NOT



# So search engines must also work off probability determination



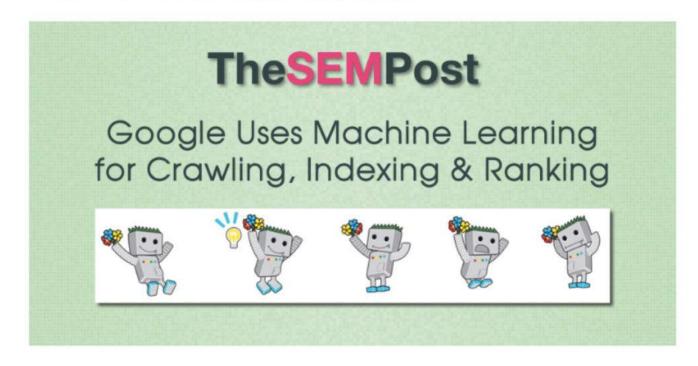
Machine learning also now powers some probability determination



#### Google Uses Machine Learning for Crawling, Indexing & Ranking

#### Google Uses Machine Learning for Crawling, Indexing & Ranking

MAY 2, 2018 AT 7:20 AM PST BY JENNIFER SLEGG — LEAVE A COMMENT

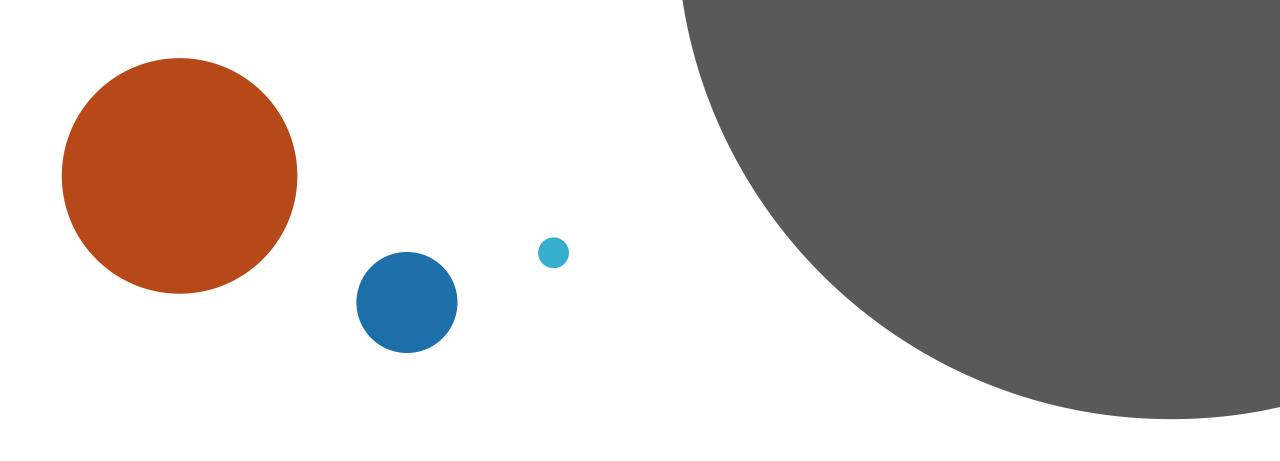




Using 'The Law of Large Numbers'



Progressive learning & increasingly 'educated' guesses



Sometimes 'probability' predictions can be unpredictable



On the 'long tail' there's often very little, or nothing in it

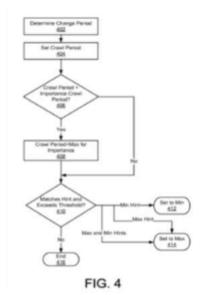
Low to no page-rank pages (but that is also now just one of very many things

# There will be lots of contributing factors now

#### 1 - PAGE IMPORTANCE CONTRIBUTORS??

- Location in Site (e.g. home page more important than parameter 3 level output)
- PageRank
- Page type / file type ('about us' e.g. less important)
- Inclusion in XML sitemap (if others are excluded)
- Internal PageRank
- Internal Backlinks
- In-site Anchor Text Consistency
- Relevance (content, anchors and elements) to a topic (Similarity Importance)
- Directives from in-page robot and robots.txt management
- · Parent quality brushes off on child page quality

#### IMPORTANT PARENTS LIKELY SEEN TO HAVE IMPORTANT CHILD PAGES





See-saw SEO

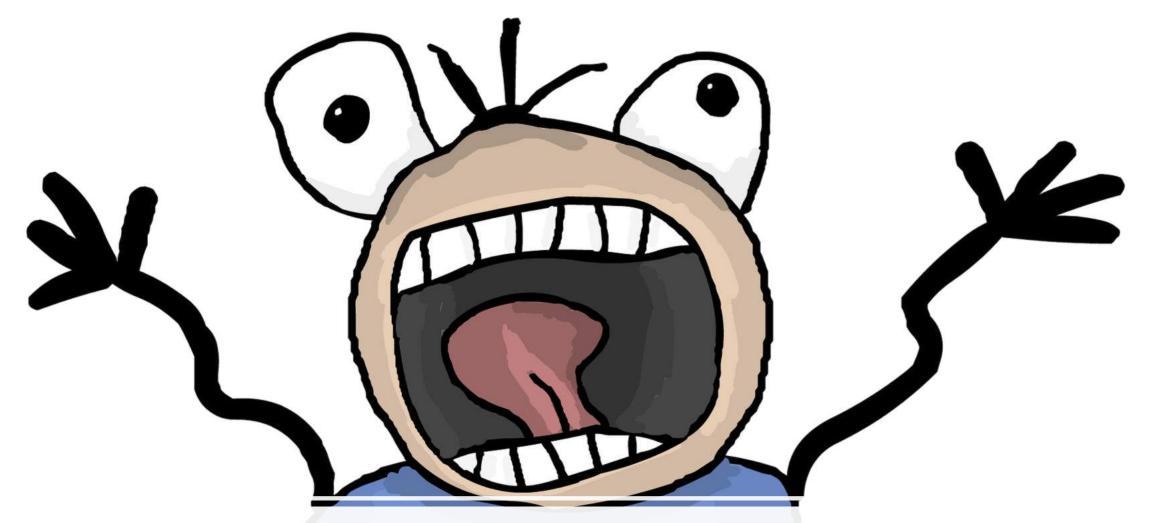


Then the canonical balance Tips From Equiprobability
Slightly

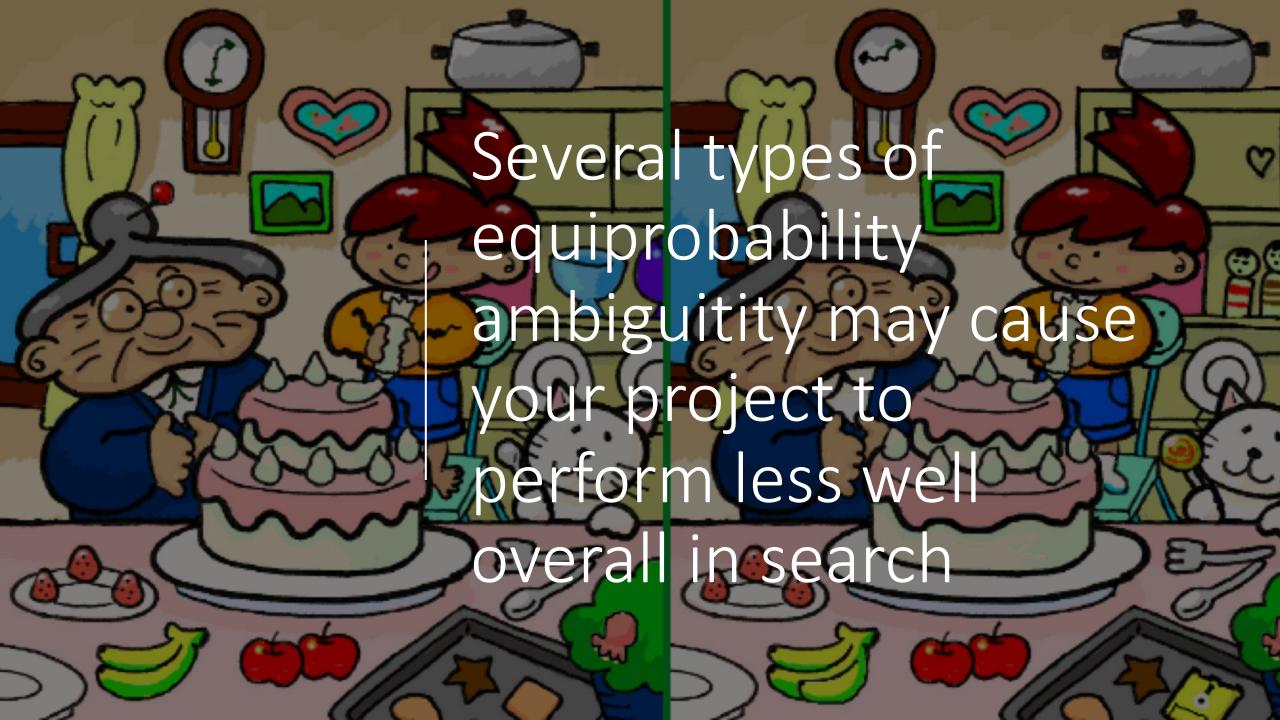




Where ambiguity leads to equiprobability intermittently



Your ranking flux might well be transferring equiprobability



Different types of ambiguity can impact SEO Exact duplicate content

Near duplicate content

Natural language ambiguity

Generational cruft based ambiguity

Machine learned ambiguity 'lag'

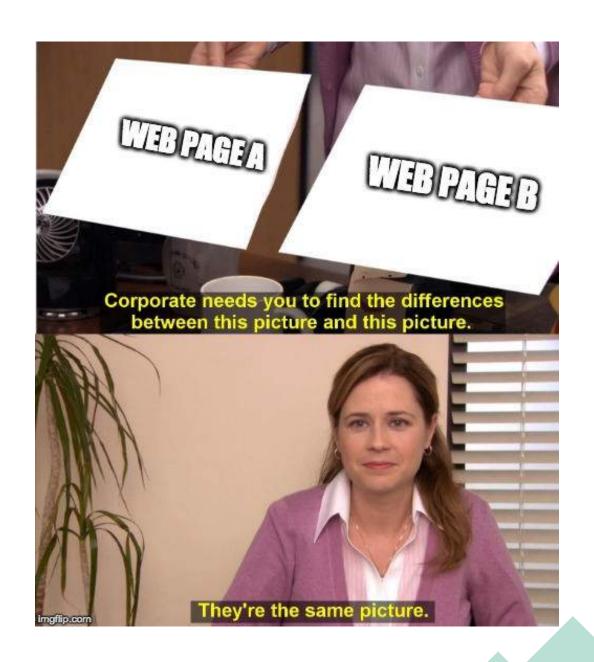
Dot-to-dot ambiguity

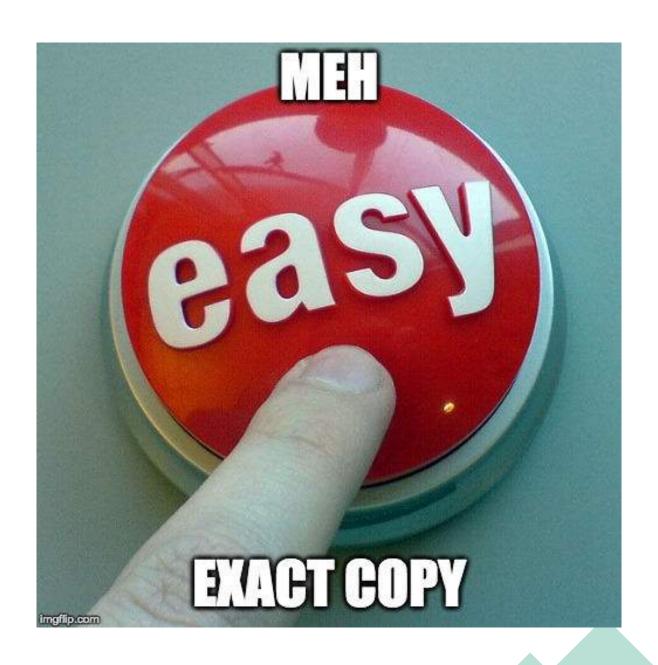
Semantic heterogeneity

Location based ambiguity

# Exact duplicate content







Google probably chooses the one with highest 'probability'

Most linked to internally

Most linked to externally

Included in XML sitemap

**HTTPS** 

**Prettier URLs** 

# Maybe one or several of many 'importance' factors

#### 1 - PAGE IMPORTANCE CONTRIBUTORS??

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- PageRank
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#### IMPORTANT PARENTS LIKELY SEEN TO HAVE IMPORTANT CHILD PAGES



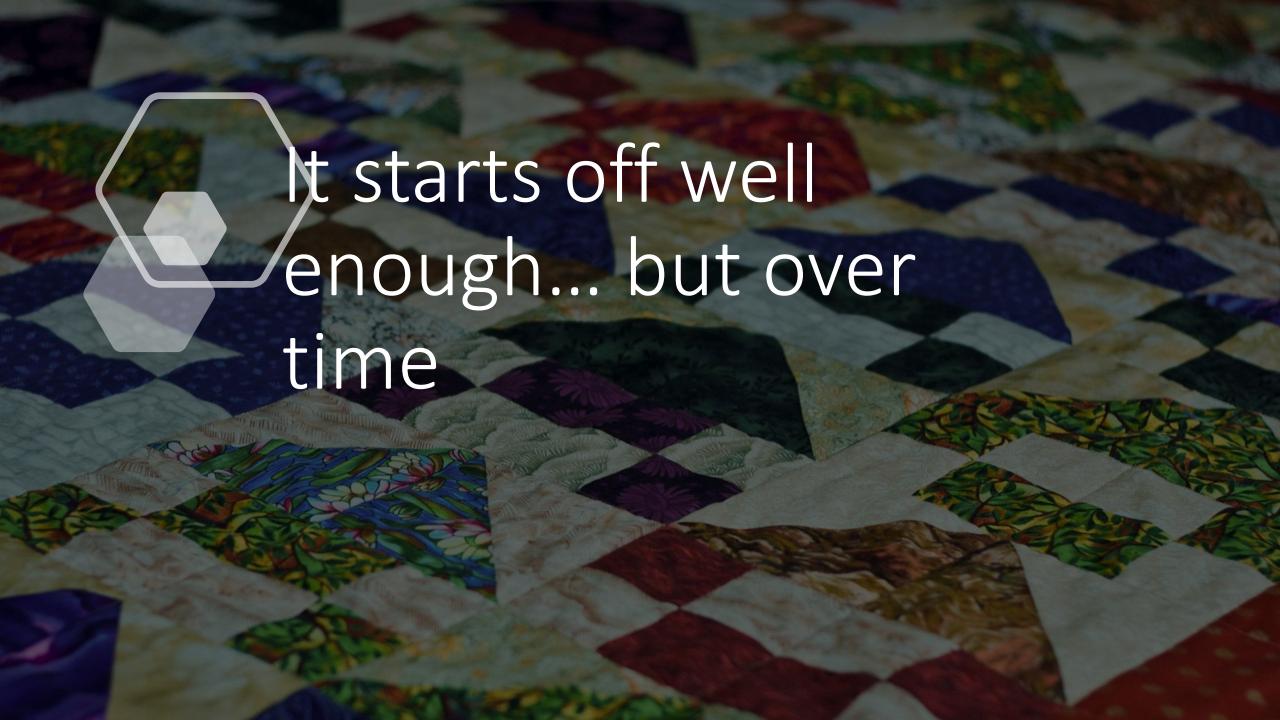
FIG. 4



# Near-duplicate content







Google realizes these pages are 'mostly' the same as others



### Some symptoms

Many matching shingles

Quilting

'Borrowed' content at scale

Feeds

Big Boilerplate / little main value

Data driven sites with little value



Sometimes these are sites trying to make a URL footprint well beyond their contribution to a positive 'Network Effect'

# Spoofing the 'Network Effect'

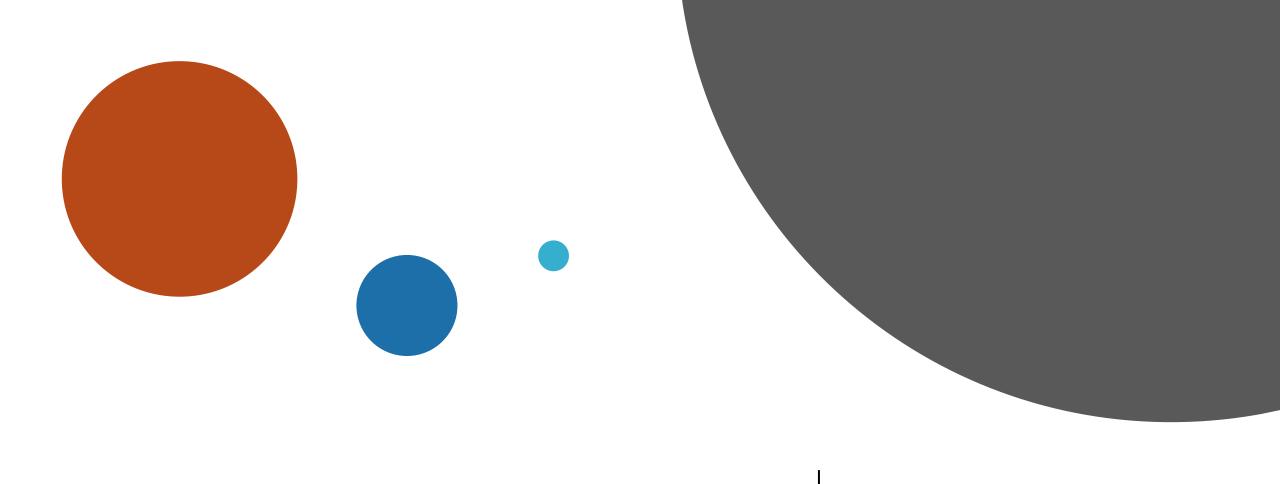




After some crawling & sampling Google puts the pieces of the puzzle together



And begins to exclude pages from the index



Exclusion still happens... A LOT



Particularly on behemoth sites

I ran a little
Twitter
competition
with only
empathy as
the prize



#### Competition time:

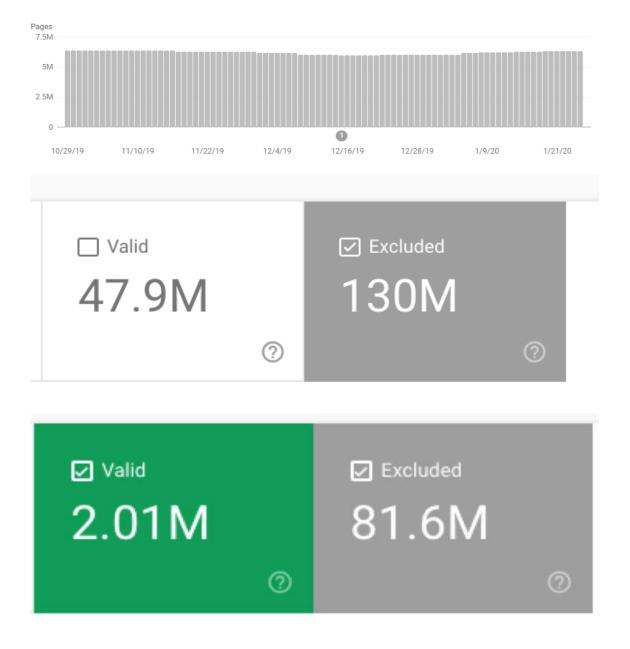
Who's got the highest number of 'Excluded' in any GSC Coverage Report.

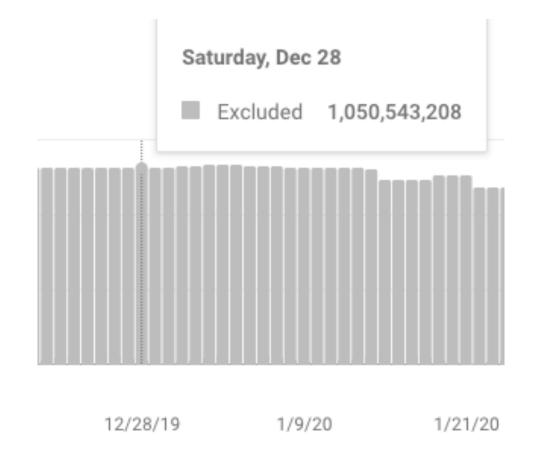
Show me the screenshots.

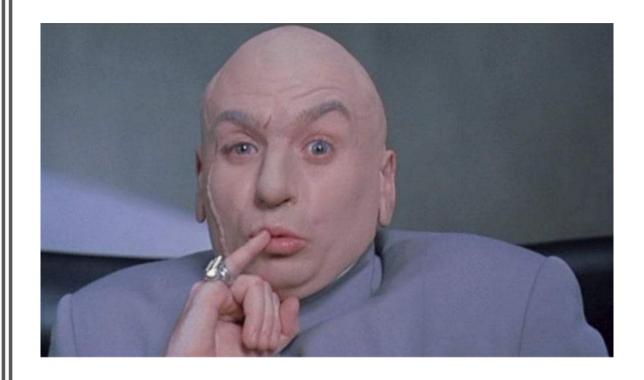
No prize for winning. Just the glory and empathy for the work ahead ;P;P

11:00 AM · Jan 27, 2020 · Twitter Web App

### Some of the GSC 'exclusion' numbers were huge... millions







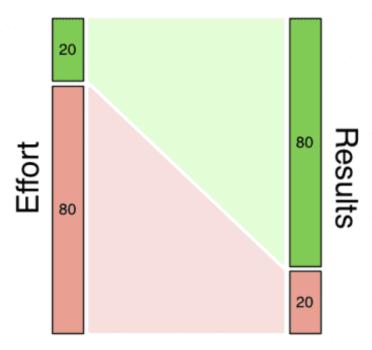
### And even over... one billion

I would hazard a guess...The majority of the largest websites in the world have a LOT of near-duplicate 'transactional' pages

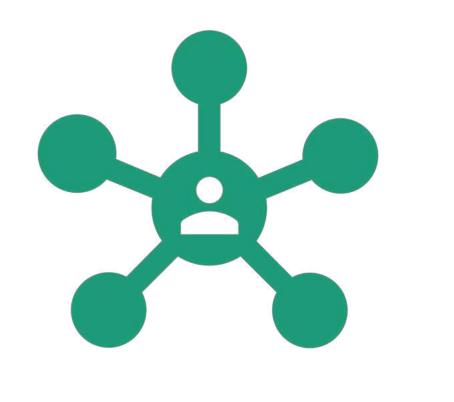
# Crawl demand probably follows the Pareto Principle

#### The 80-20 Rule

"For many events, roughly 80% of the effects come from 20% of the causes." - Pareto



Therefore 20% of the effort produces 80% of the results but the last 20% of the results consumes 80% of the effort.



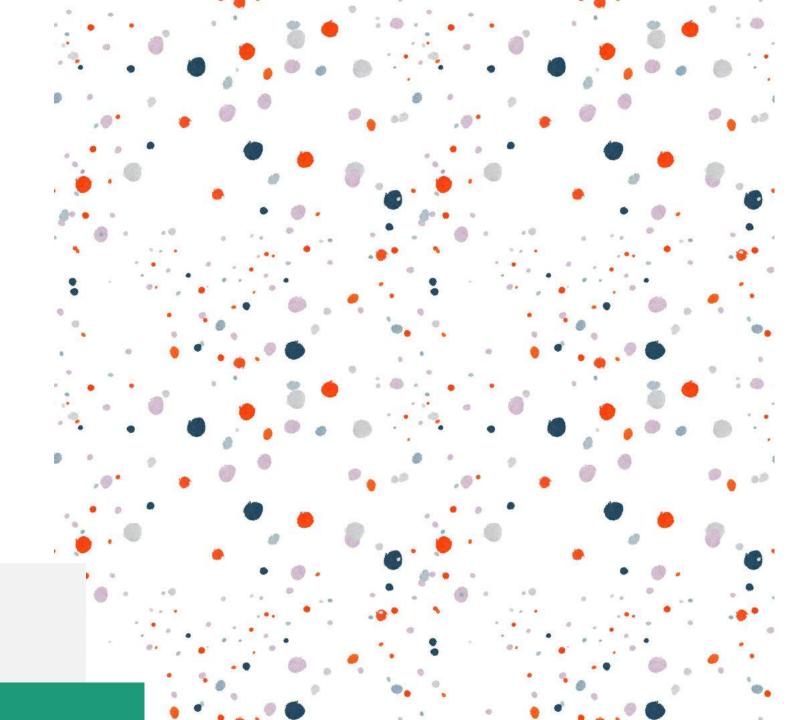
Probably 20% of the URLs satisfy 80% of the demand & contribute well to 'The Network Effect'

Since search engines probably work with positive 'impact' value considered



### Google will likely use mostly 'Sampling' on those heavy 'excluded URL' sites

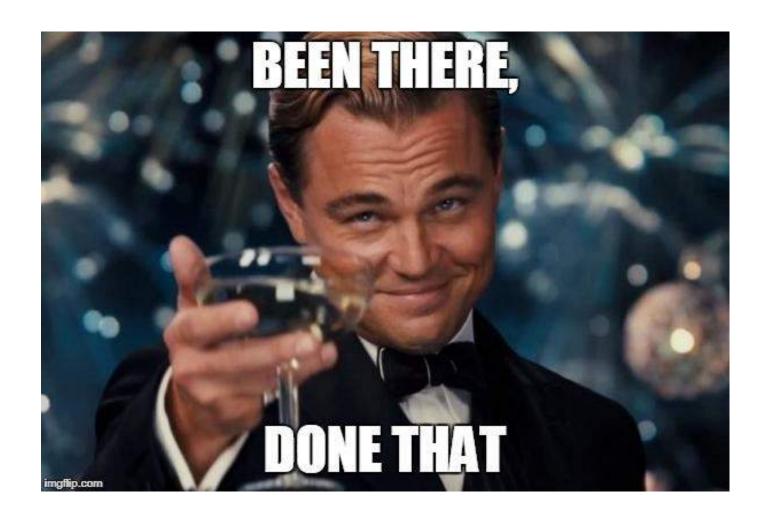
Looking for small samples of content & URL patterns... and... 'Discovered, not crawled' will be high



'Discovered, not crawled' in GSC is Google saying...



They know what's down that site section or URL parameter path



The verdict is in

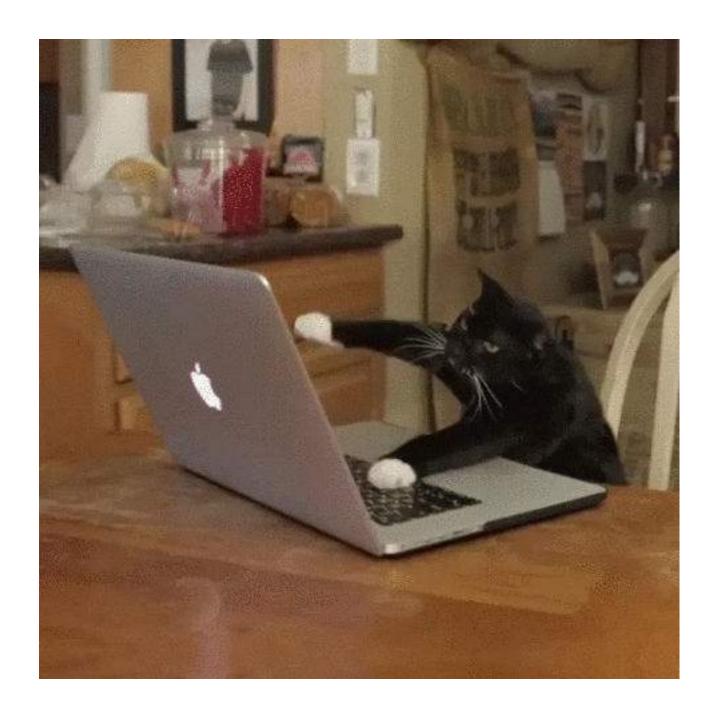


# Those URLs will be 'starved' of crawl



However many times you submit and inspect







Natural language ambiguity



For machines words are problematic. Ambiguous... polysemous... synonymous

In spoken word it is even worse because of homophones and prosody

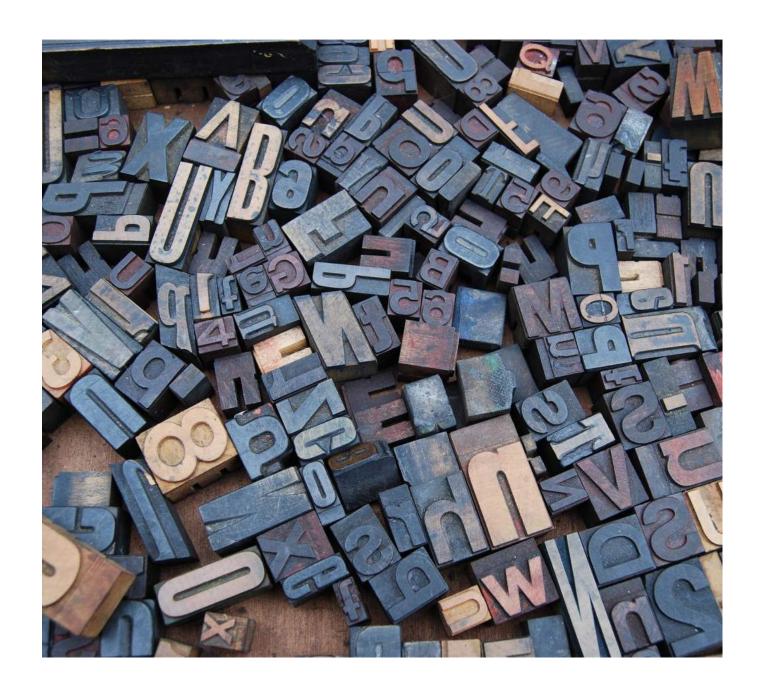
Like "four candles" and "fork handles"





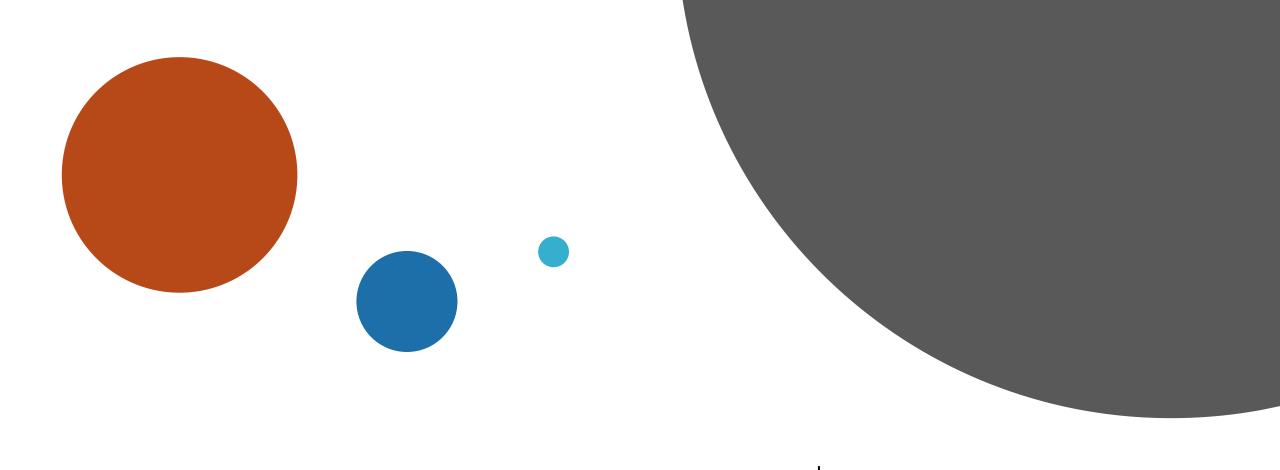


Many words have multiple meanings.
Like "like" can be 5 possible parts of speech (POS)



# Word's context helps enormously

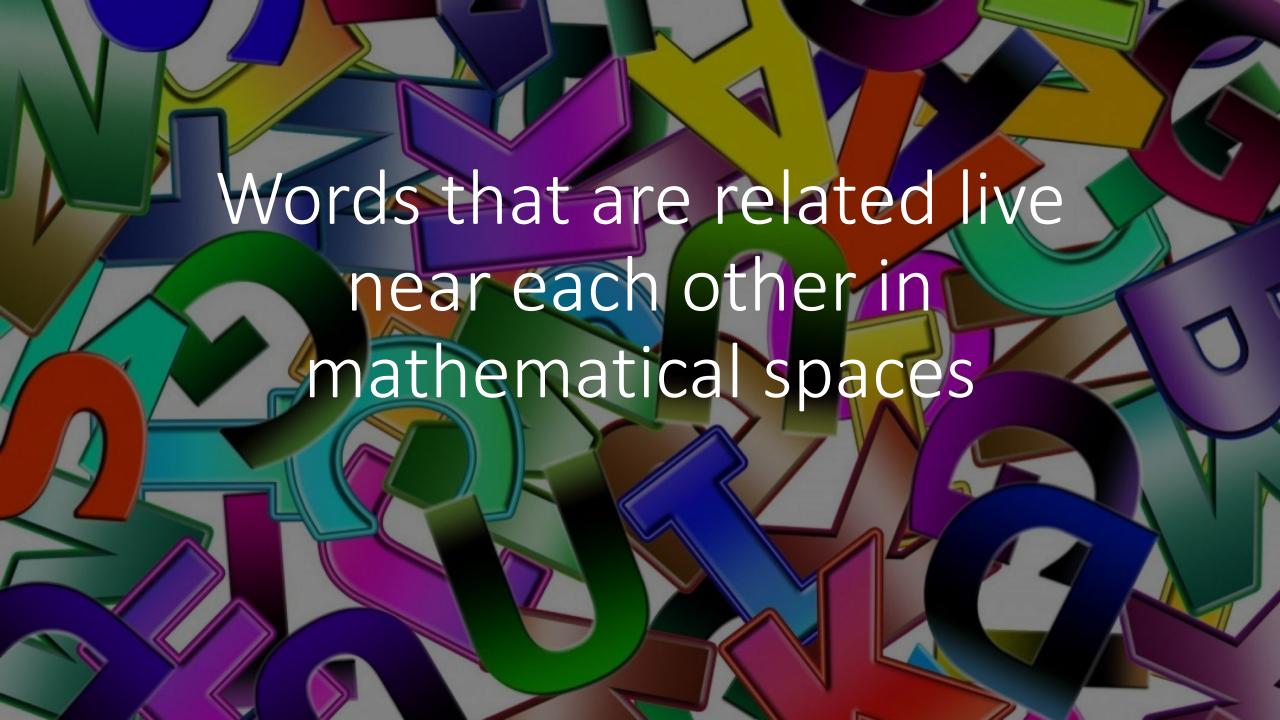




And disambiguating words is getting easy(ier)



"You shall know a word by the company it keeps" (Firth, 1957)



There are HUGE leaps forward in natural language understanding now using machine learning

Accelerated mostly by Google's BERT (Bi-Directional Encoder Representations from Transformers)



Cooccurrence in content helps A LOT In the page itself

In the interconnected pages

In the subcategorisation

In the site sections

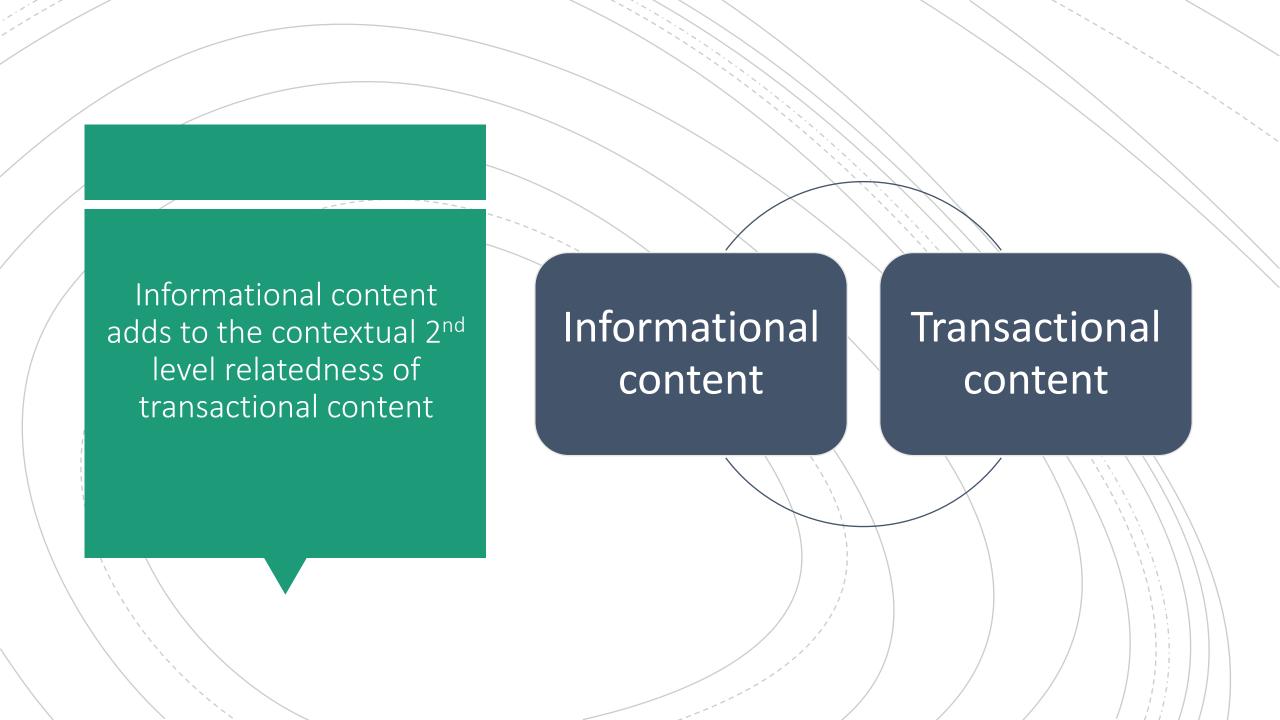
In the external relationships

In the domain ontology as a whole

Relatedness

First level relatedness

Second level relatedness



If you can help with 'informational needs' you can 'probably' help with transactional needs

## Add value in rich informational needs

Contextual value passes throughout the whole site

Adding
Contextual
Value Does
Not Mean

Adding

Adding loads of content below ecommerce pages

Adding

Adding LSI keywords in ecommerce pages

High topical relatedness & context vectors

#### Internal linking

Not spam

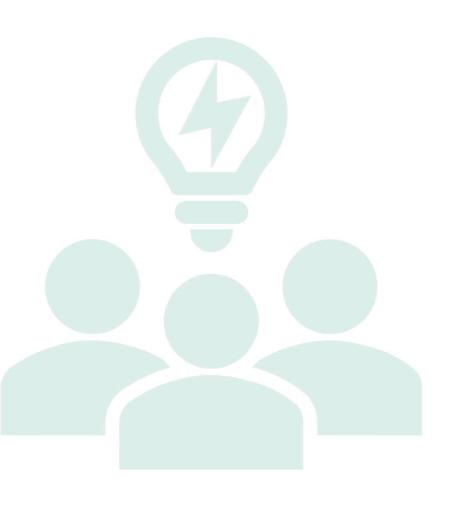




Utilise conceptual 'nearest neighbours' well



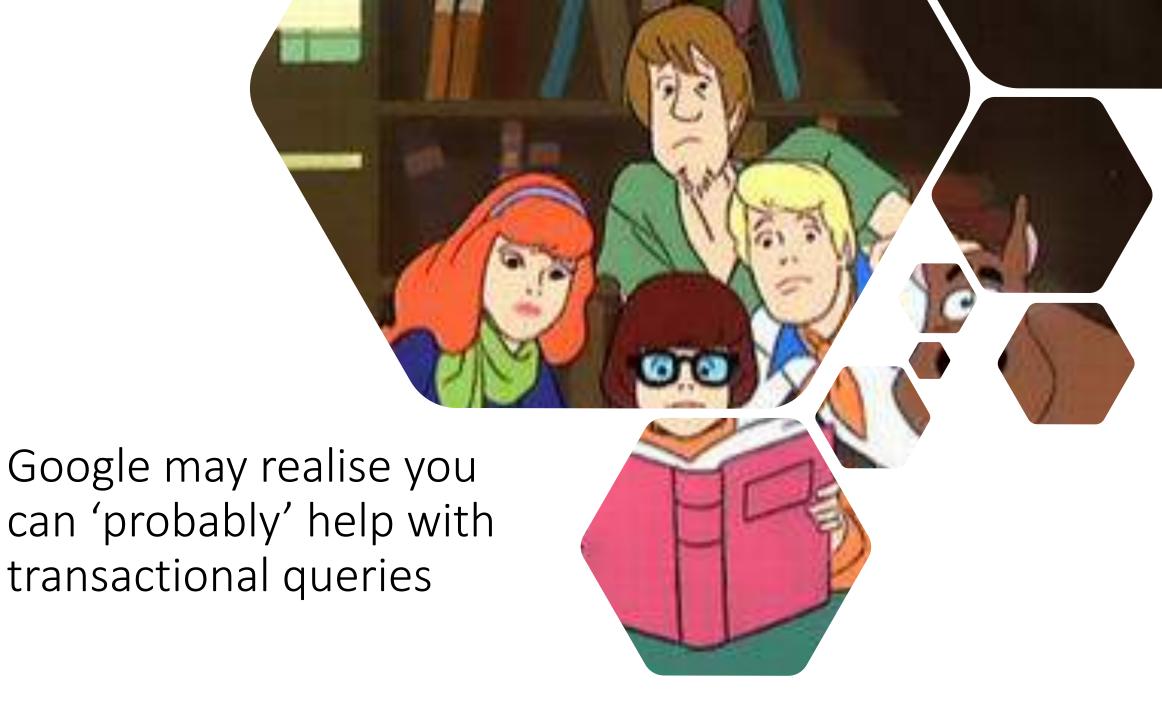
Identify content which is 'very' closely related





Merge content which is 'too' conceptually very similar with no separate demand

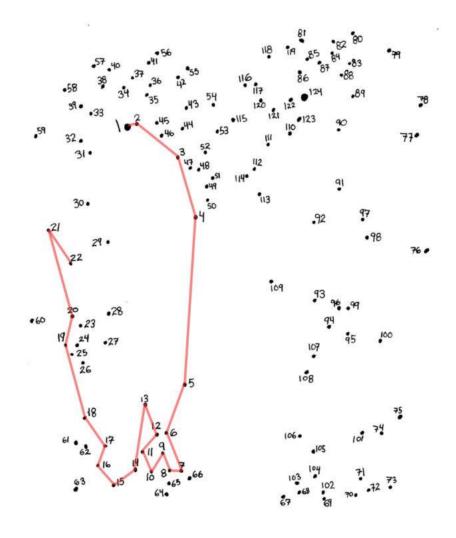
# Utilise 'Overflow SEO' as demand & content naturally grows



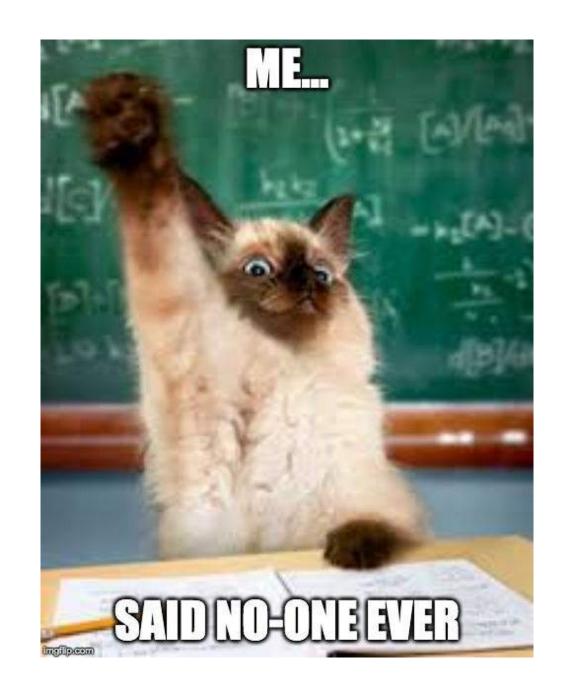
Dot-to-dot ambiguity



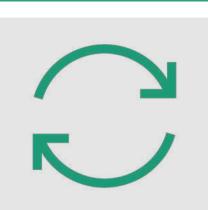
Who knows what this dot to dot puzzle is creating?



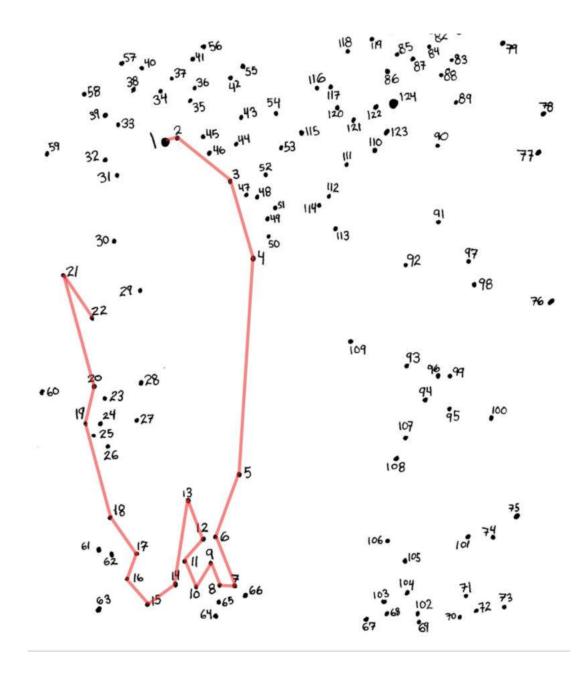
## Absolutely no-one



If you chop away or migrate half of your website then equiprobability will likely be a problem



A half drawn website is not the same as a fully drawn previous website?



Did you just 'prune away' your corpus 'relatedness'?

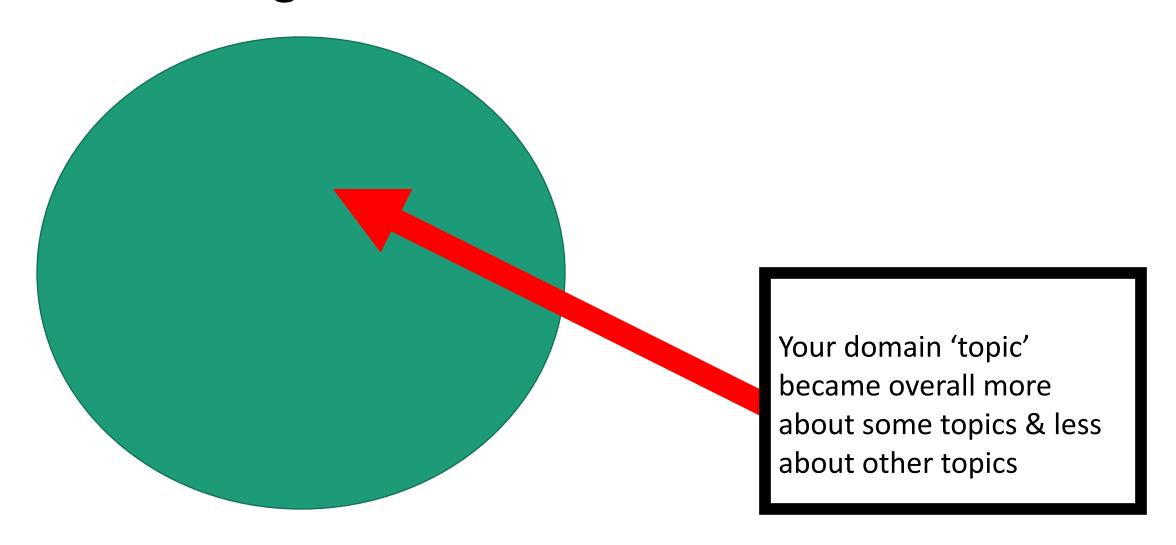


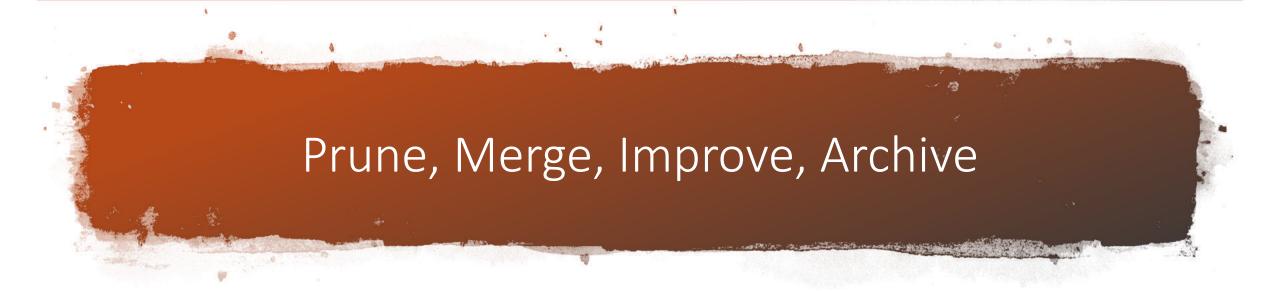
Informational content adds to the contextual 2<sup>nd</sup> level relatedness of transactional content

Informational content

Transactional content

### Although you may rank 'marginally' better for fewer things





01

Prune – Only ballast

02

Merge – Highly semantically related content

03

Improve – Evergreen pages worth the effort

04

Archive – Older pieces of temporal content (like a library)

Avoid removing or hiding user generated content (except spam)





# Cruft based ambiguity





Generational cruft contributes to equiprobability issues

Just a few examples... legacy is a problem

#### 301 redirect chains

**Inconsistent 301s** 

No 301s at all

Canonical points to a 301

Canonical points to a no-index

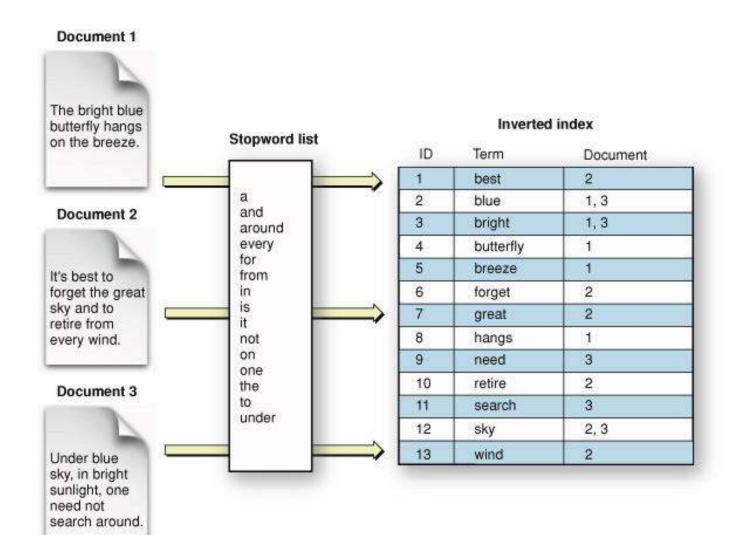
No-index points to a canonical

### 301 Should Mean The Resource Moved



You're supposed to be telling search engines where the words (tokens), topics, concepts & entities went

# You're saying things moved so they can be re-filed



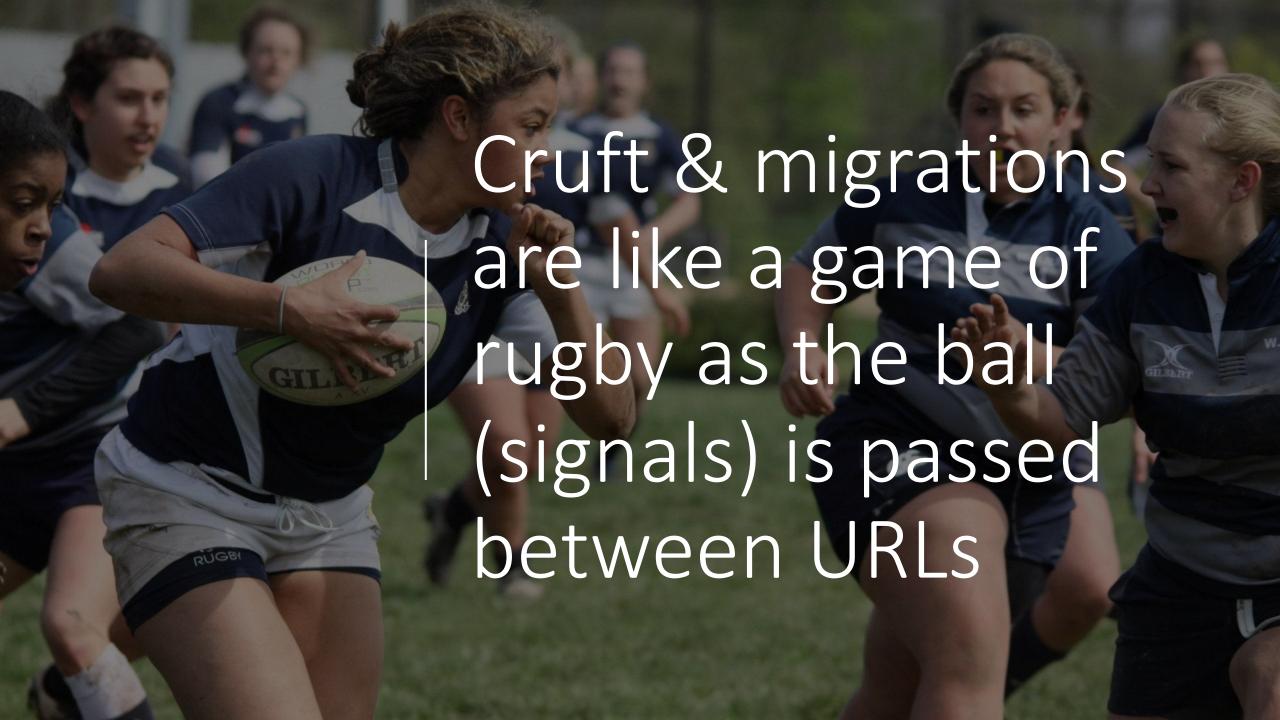
But often there is little or no match at all



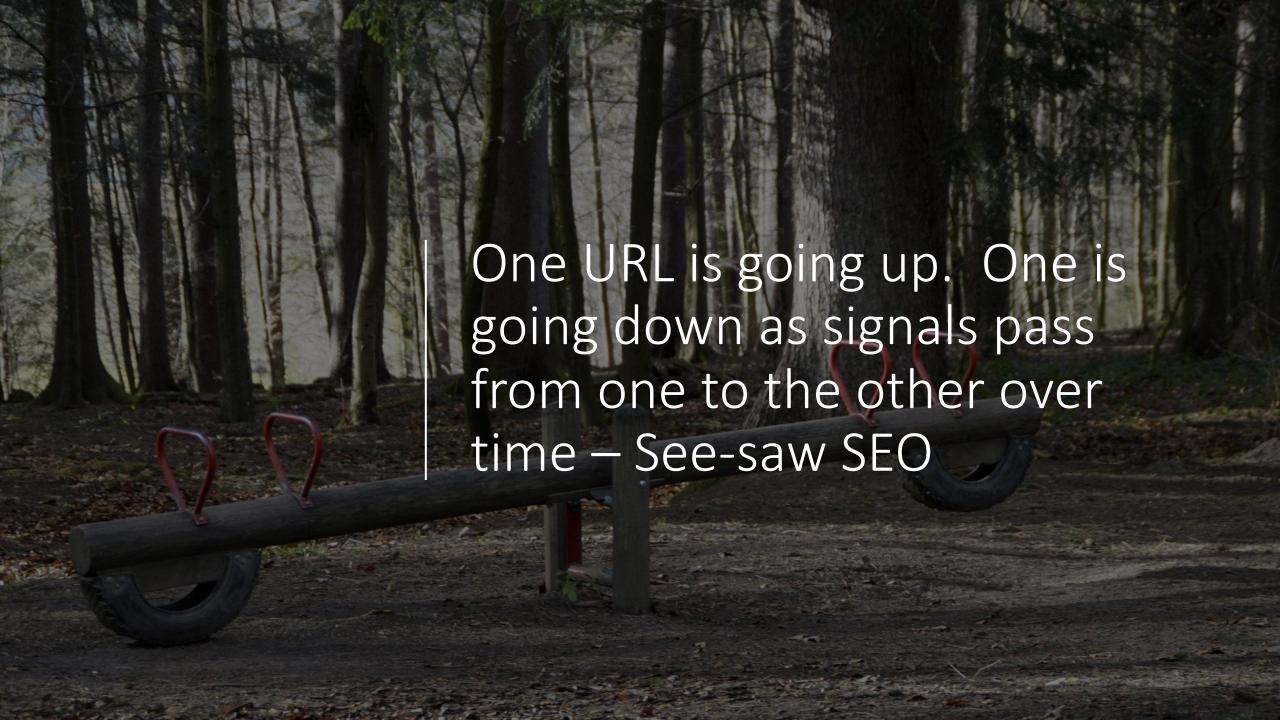
Borderline or true 'soft 404'



Also, any legacy canonicals are now defunct by the redirect status



## A sign of this is a temporarily wrong target ranking





Machine learned ambiguity 'lag'

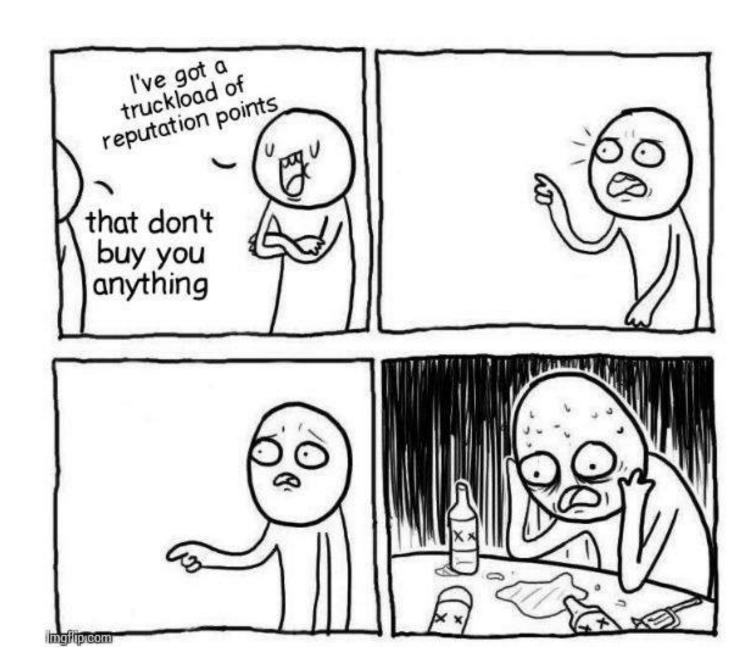


#### ALL of the above ==



Crawl Budget
Woes / Learned
Quality Patterns

Your reputation precedes you You are being judged on the past



## Your quality & crawl will be 'machine learned' by 'Large Numbers' over time

Probably you'll struggle to get enough crawl for Google to catch up





Search engines realise there is no 'demand' for your poopy pages' You've probably got URLs which have not been crawled for years

#### Your performance will be based on what is indexed

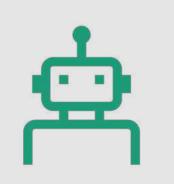


Replying to @kumarsinghdk, @Marie\_Haynes and @bill\_slawski

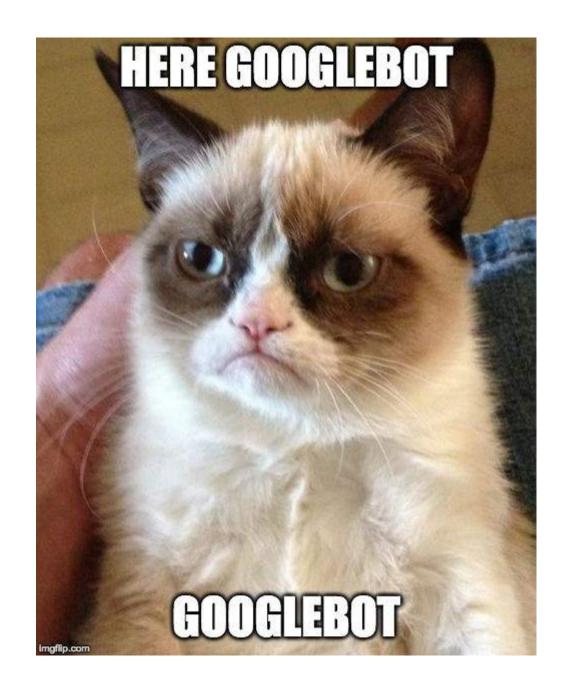
We do use the indexed content as a basis for what we show in search, so if you significantly change your page's content, I'd expect that to be reflected in search over time too.

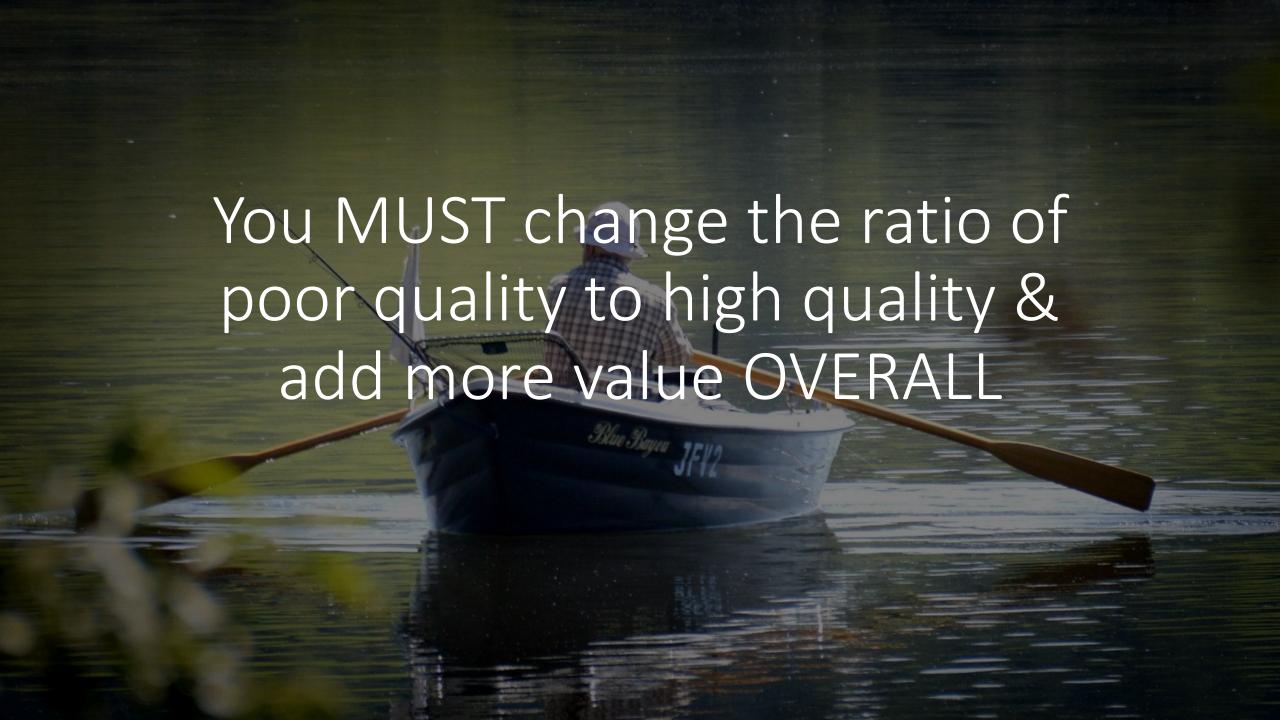
10:04 am · 21 Jan 2020 · TweetDeck

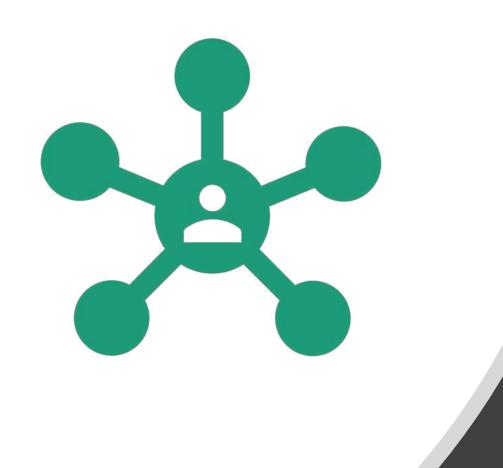
### Fear not... Small Wordpress site



You need to lure a Grumpy Googlebot with tasty quality content morsels







And contribute positively to 'The Network Effect'

You need to substantively improve the quality of your pages, regain the crawl and get more demand

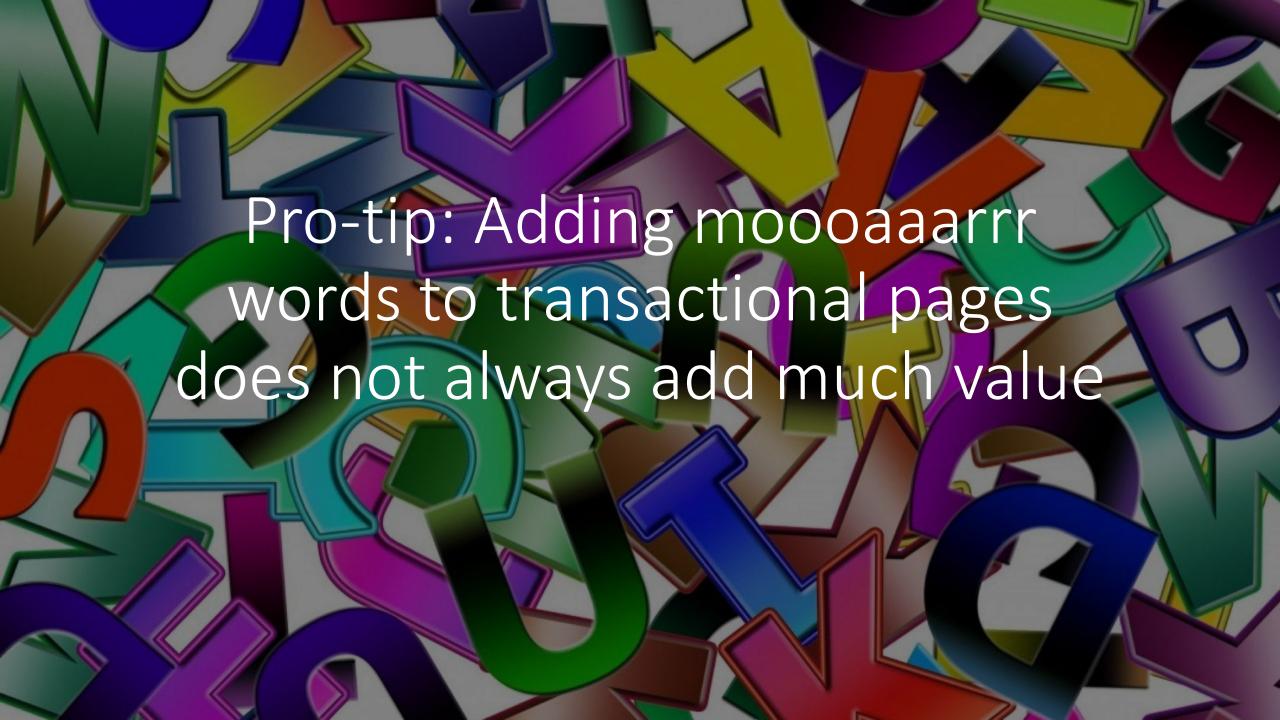




Watch for patterns (clues) in GSC Coverage & take a demanddriven approach

In transactional pages identify valuable content, features & attributes your audience wants

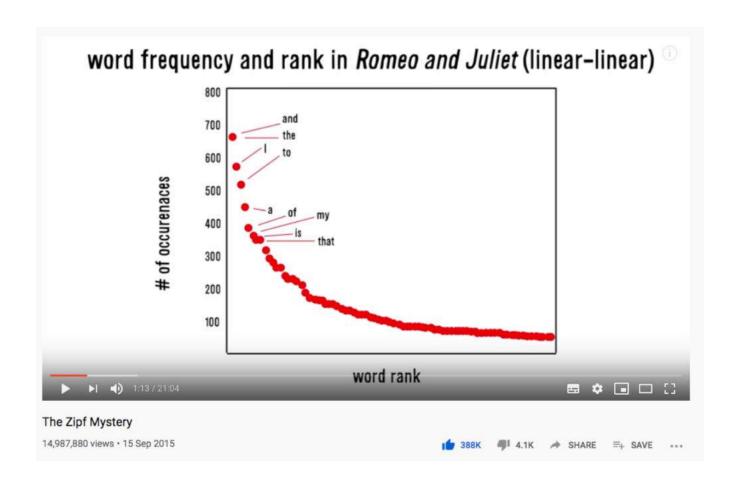






Plus... There is often a mathematically natural ordered pattern to things ranked by frequency

Like word frequencies many types of 'ordered' popularities will have a Zipfian Distribution



Where the frequency of x is inversely proportional to its frequency table rank – 1/n

Zipfian Distribution occurs in many other rankings unrelated to language

Population of cities in a country

Corporation sizes

Income rankings

No. of people watching same TV channel

Nurture internal link graph popularity that mirrors 'real life popularity



#### Popularity & Zipfian Distributions

Is it really popular in 'real life'?

Does it follow 'The Network Effect'?

Or are you manipulating it for things you want to rank for (which aren't really popular at all)?



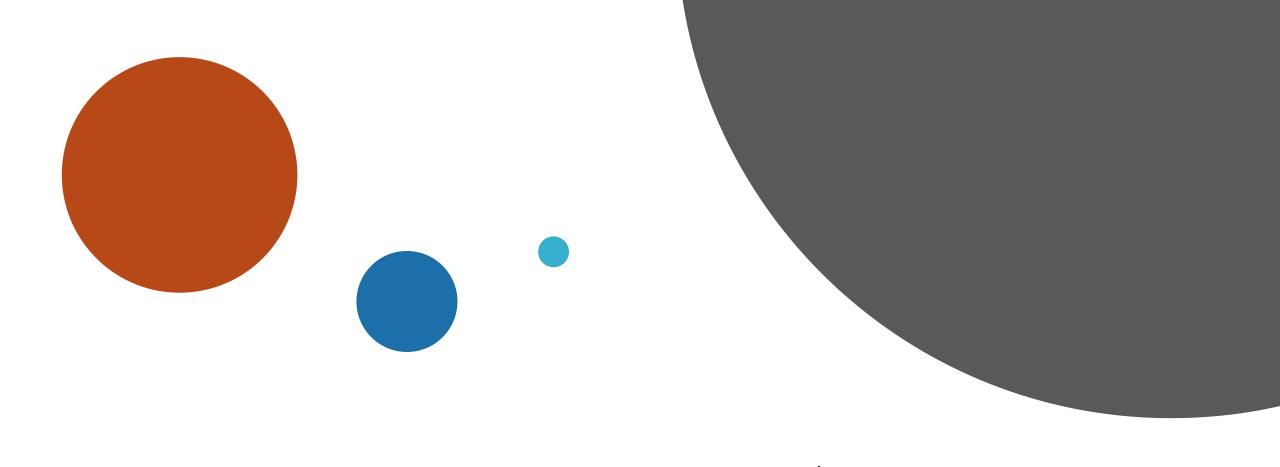
# Bow tie of the web & strongly connected components



Building genuine topical hubs (Hub & spoke)



Google puts the pieces of the puzzle together slowly but increases with quality improvements



Equipossibility goes well beyond duplicate content too

Semantic heterogeneity





### The Web of Document Vs The Web of Data

## Applies mostly to entity-oriented search

Mis-matching data types or equivalencies in data tables from same or other domains

#### Linked Data has been around for a long time

The **inventor** of the World Wide Web and the creator and advocate of the Semantic Web and **Linked Data**, Sir Tim Berners-Lee, laid down the four design principles of **Linked Data** as early as in 2006.

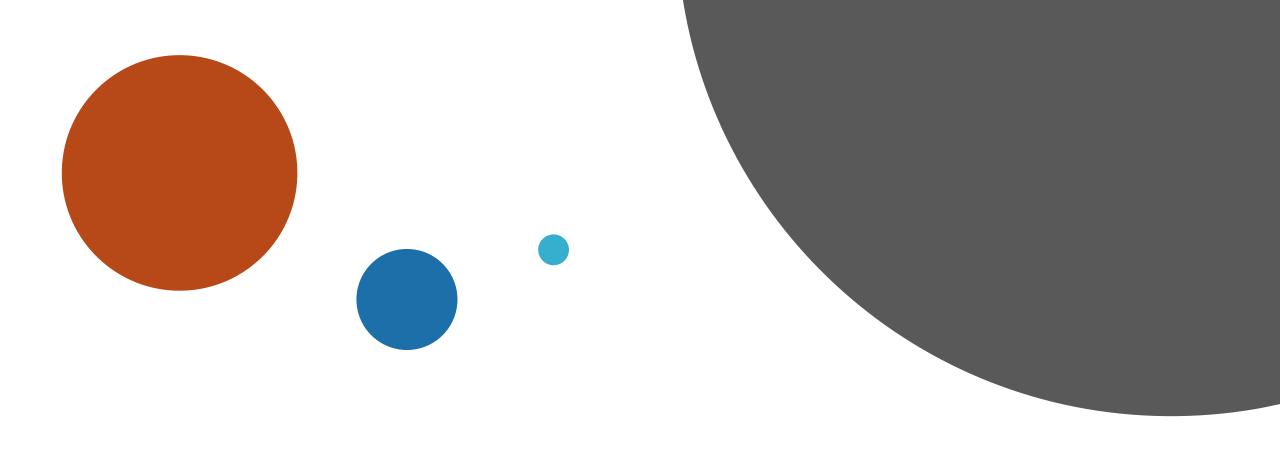


www.ontotext.com > knowledgehub > fundamentals > linked-data-linke...

What are Linked Data and Linked Open Data? - Ontotext

There have historically been several ways to implement linked data



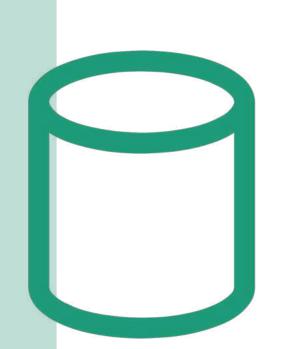


Several linked-data types & web sources come together causing equipossibility

## Some Types of Semantic Web Technologies & Their Markups



## Implementation Inconsistencies Prevail (ed)



## The Knowledge Graph & Its Data Sources

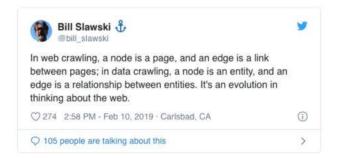
The majority of Google's entity types reference the Wikipedia URI or the Knowledge Graph MID

#### But Now Anything Structured Might Be Used



#### GOOGLE MAY USE ENTITY EXTRACTIONS, ENTITY CLASSES, ENTITY PROPERTIES, AND ASSOCIATION SCORES FROM PAGES TO BUILD KNOWLEDGE GRAPHS

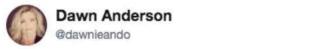
When Google introduce the Knowledge Graph in 2012, it told us that it was going to start focusing upon things and not strings. That process is maturing, and we have a chance to watch Google learn how to start crawling the Web to mine data and engage in entity extractions, instead of mining web information such as pages and links. As I wrote recently on Twitter about this:



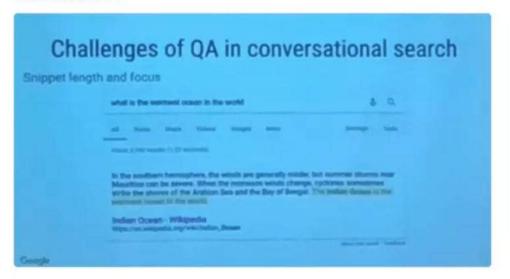
A recently granted Google patent tells us about how the search engine may perform entity extractions from web pages, and store information about them. This goes beyond using knowledge bases as sources of information about entities, and moves on to finding more than what may be available in such sources, by looking at textual passages on web pages. The problem that this patent is intended to solve is described in this early line from the patent:

Conventional knowledge bases, however, can fail to provide up-to-date or reliable information regarding

#### We already know conversation search fills gaps via web information



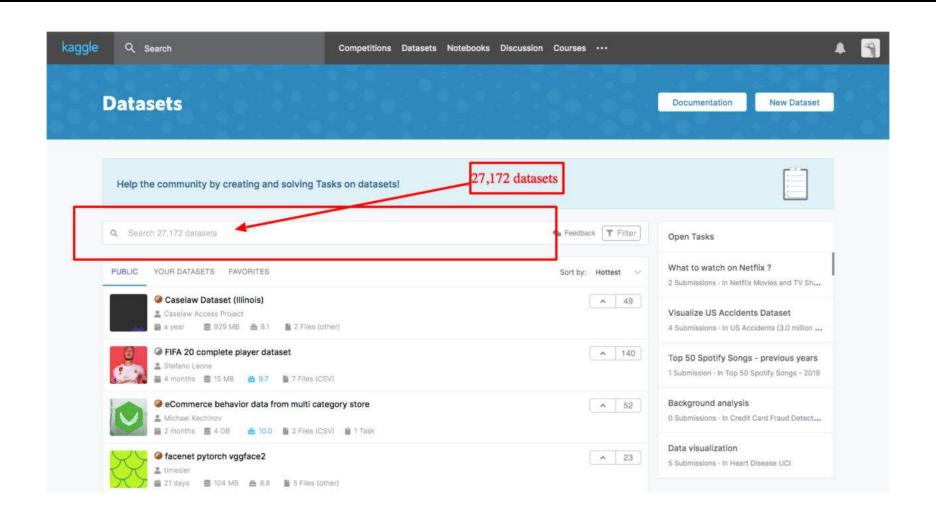
If there is no entity in schema conversational search next checks the web for information #essir2017



9:17 AM - 6 Sep 2017



#### Public Datasets (e.g. Kaggle) > 27k datasets



#### Enter Data Search by Google Al



The Keyword

Latest Stories

Product Updates

Company News

SEARCH

### Discovering millions of datasets on the web

#### Natasha Noy

Research Scientist, Google Research

Published Jan 23, 2020

Across the web, there are millions of datasets about nearly any subject that interests you. If you're looking to buy a puppy, you could find datasets compiling complaints of puppy buyers or studies on puppy cognition. Or if you like skiing, you could find data on revenue of ski resorts or injury rates and participation numbers. Dataset Search has indexed almost 25 million of these datasets, giving you a single place to search for datasets and find links to where the data is. Over the past year, people have tried it out and provided feedback, and now Dataset Search is officially out of beta.



Lipdated Nov 9, 2017

Total Revenue for Skiing Facilities, All Establishments, Employer Firms REVEF71392ALLEST





### Disambiguating Data Sets (is hard)

## Probability Predictions Can Be VERY Wrong



## Example: Philosophers Dates of Birth different in Wikidata & DBPedia



#### Ivo Velitchkov @kvistgaard · Jan 27

@dawnieando Here is a query w.wiki/GDq giving 50 philosophers for which @dbpedia and @wikidata state different date of birth.

You may change the DBpedia type for other occupations and the limit if you want different number of results.

#### #SPARQL

Hector Zagal	1966-06-06	1952-06-06
John Gardner	1965-03-25	1965-03-23
Paul Copan	1962-09-26	1962-09-20
Muhammad Tahir	1962-03-21	1962-01-06
Matthew Kramer	1959-06-09	1959-01-01
Mohsen Kadivar	1959-06-08	1959-06-07
Norbert Schmitt	1956-01-23	1956-01-01
Peter M. Haas	1955-01-23	1955-01-25
Michael Sandel	1953-03-05	1953-05-03
Javed Ahmad Ghamidi	1952-04-07	1951-04-18
Hitoshi Nagai	1951-11-10	1951-01-01

#### I asked for some examples on Twitter

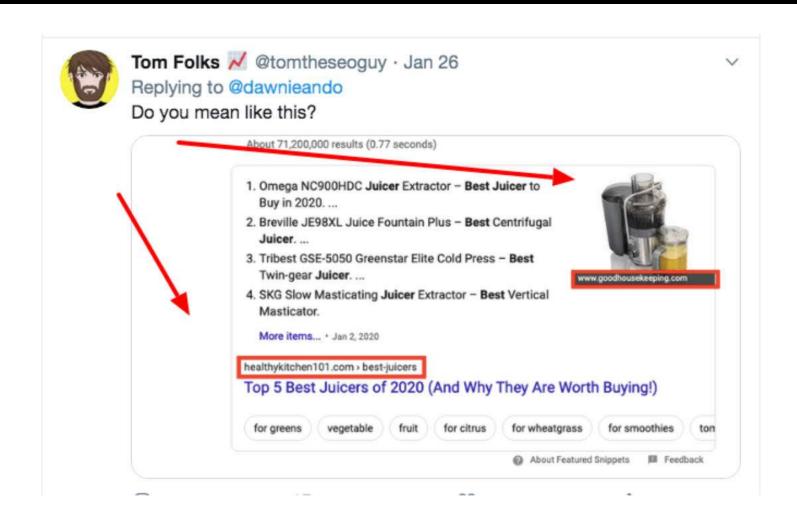
V



Hey folks. Can anyone provide me with examples of inconsistencies in knowledge graphs (e.g. some data taken from one place and some taken from another place). e.g. photos from one place and content from another place). I know these are out there but please share examples

11:36 AM · Jan 26, 2020 · Twitter Web App

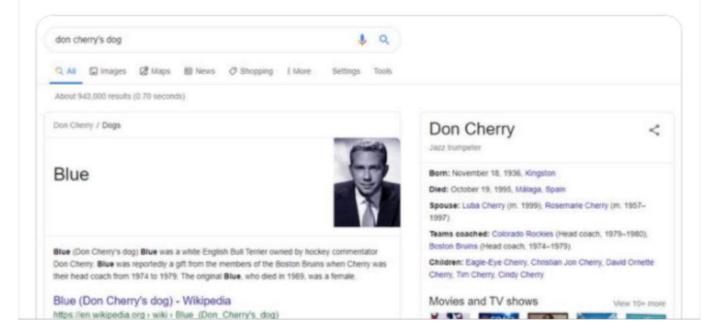
#### The community responded



'Mashed-up' Knowledge Graphs (Two Don Cherry's and his dog's name - 'Blue'



Disambiguation is hard. The knowledge panel is a mashup of Don Cherry, the jazz trumpeter, and Don Cherry the (former) CBC hockey commentator. Keen eyes may also have correctly assessed that that's not a picture of the dog, Blue (it's Don Cherry, "big band singer and golfer").



About 76,800,000 results (0.59 seconds)

#### Don Cherry's dog 'Blue'

#### Images for don cherry dog



breed



bull terrier



name





suit

hockey

canada









Image Search Got Don Cherry's Dog Right

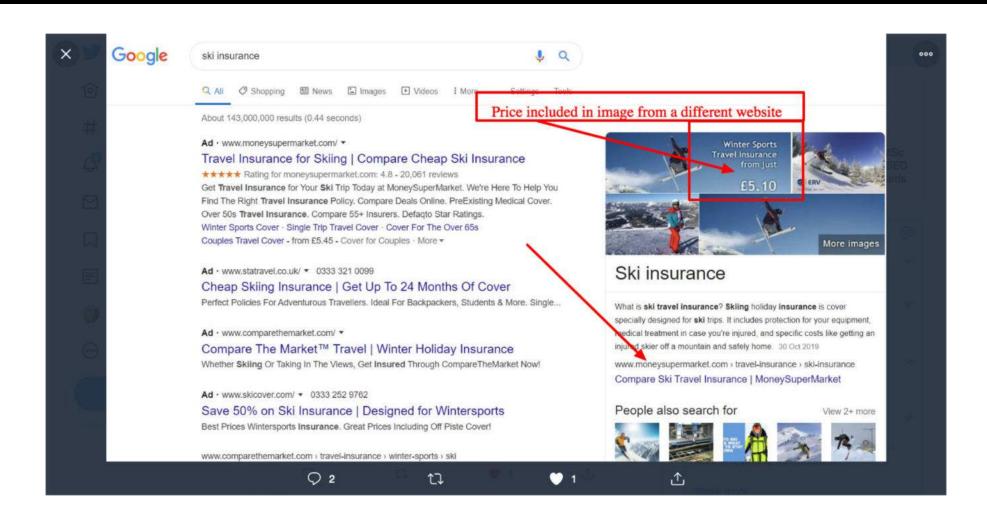


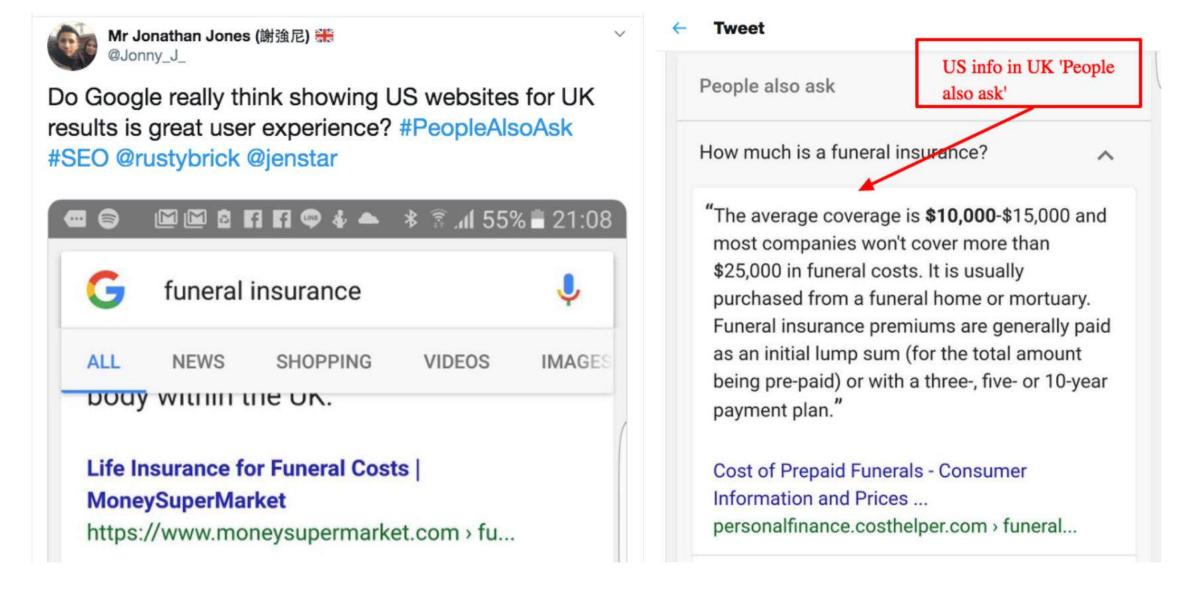






#### Wrong price included in images from other sites





US Price Info Showing in UK 'People Also Ask'

#### Edgar's Were Comical



Replying to @dawnieando and @aaranged

See slideshare.net/edgar.meij/201... at around slide 23...



#### Web-scale semantic search

Most web search engine users are increasingly expecting direct and contextually relevant answers to their informatio...  $\mathscr{S}$  slideshare.net

3:22 PM · Jan 29, 2020 · Twitter for iPhone

### Van Diesel – Death – To Be Advised??



Vin Diesel, born as Mark Vincent, is an American actor, producer, director, and screenwriter. He came to prominence in the late 1990s, and first became known for appearing in Steven Spielbergs Saving Private Ryan... wikipedia.org

Born: July 18, 1967, New York City, New York, USA

Died: January 30, 2014, TBA

Height: 5' 11" (1.82m)

Partner: Paloma Jiménez (2008-2014)

Parents: Irving Vincent, Delora Vincent

### Does An Ice Cube Have Parents?



An ice cube is a small, roughly cube-shaped piece of ice (frozen water), conventionally used to cool beverages. Ice cubes are sometimes preferred over crushed ice because they melt more slowly; they are standard in... wikipedia.org

Born: June 15, 1969 (age 44), Los Angeles, California, USA

Height: 5' 7" (1.73m)

Spouse: Kimberly Woodruff (m. 1992-present)

Parents: Doris Benjamin, Hosea Jackson

Children: Darrel Jackson, O'Shea Jackson Jr., Shareef Jackson, Karima

Jackson, Deja Jackson

Feedback

# Teenage Mutant Ninja Turtles paint works of art

#### Michelangelo

Artist



Michelangelo di Lodovico Buonarroti Simoni, commonly known as Michelangelo, was an Italian sculptor, painter, architect, poet, and engineer of the High Renaissance who exerted an unparalleled influence on the... wikipedia.org

Born: March 6, 1475, Caprese Michelangelo

Died: February 18, 1564, Rome

Parents: Ludovico di Leonardo di Buonarotto Simoni, Francesca di Neri del

Miniato di Siena

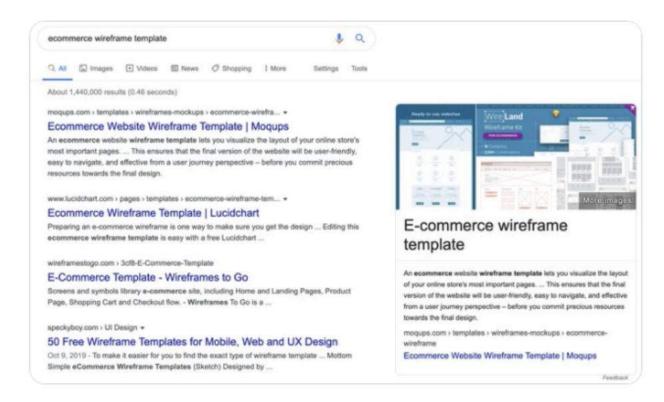
Feedback

## Images from Direct Competitors



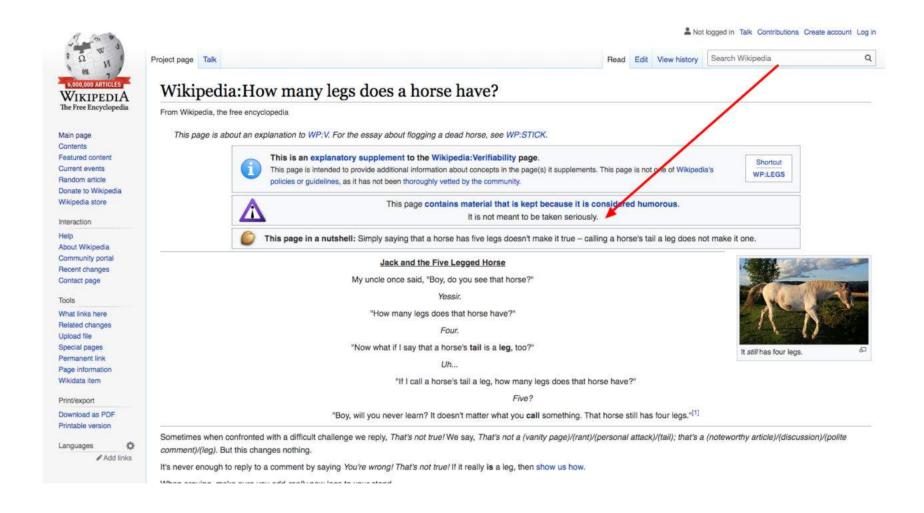
Replying to @dawnieando

#### Link and content from Moqups, images from competitors.



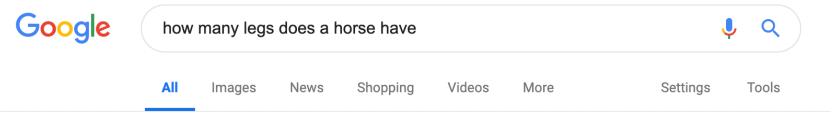
3:29 PM · Jan 29, 2020 · Twitter Web App

#### Wikipedia Made Their Point Well



"Simply saying that a horse has five legs doesn't make it true – calling a horse's tail a leg does not make it one." (Wikipedia, 2019)

#### A six legged horse?



About 273,000,000 results (0.46 seconds)

#### six legs

All horses have **two legs** at the back. They also have fore legs at the front. That makes it a total of **six legs**. But six is an odd number of legs for a horse to have.



Wikipedia: How many legs does a horse have? - Wikipedia

https://en.wikipedia.org/wiki/Wikipedia:How\_many\_legs\_does\_a\_horse\_have%3F

Somes Reputable
Knowledge
Repositories are
Just Plain 'Wrong'

#### Google Works To Fix How Many Legs Horses & Snakes Have

Apr 30, 2019 • 8:10 am | — (3)
by Barry Schwartz | Filed Under Google Search Engine





# Equivalency between data sources is sought



## Efforts Are Underway to Resolve

Since 2011 major search engines have been focusing on Schema commonly

# Google Deprecating Data-vocabulary Schema

#### Google Sending data-vocabulary.org Schema Deprecation Notices

Jan 22, 2020 • 7:11 am | — (1)
by Barry Schwartz | Filed Under Google Search Engine Optimization



Google announced yesterday that starting on April 6, 2020 it will no longer support datavocabulary.org schema. Hours later, Google began sending notifications via Google Search Console about this happening.

### Your Breadcrumbs Markup May Be Impacted



#### Breadcrumbs issues detected on https://www.

To the owner of https://www.

1/:

Search Console has identified that your site is affected by 1 Breadcrumbs issues:

#### **Top Warnings**

Warnings are suggestions for improvement. Some warnings can affect your appearance on Search; some might be reclassified as errors in the future. The following warnings were found on your site:

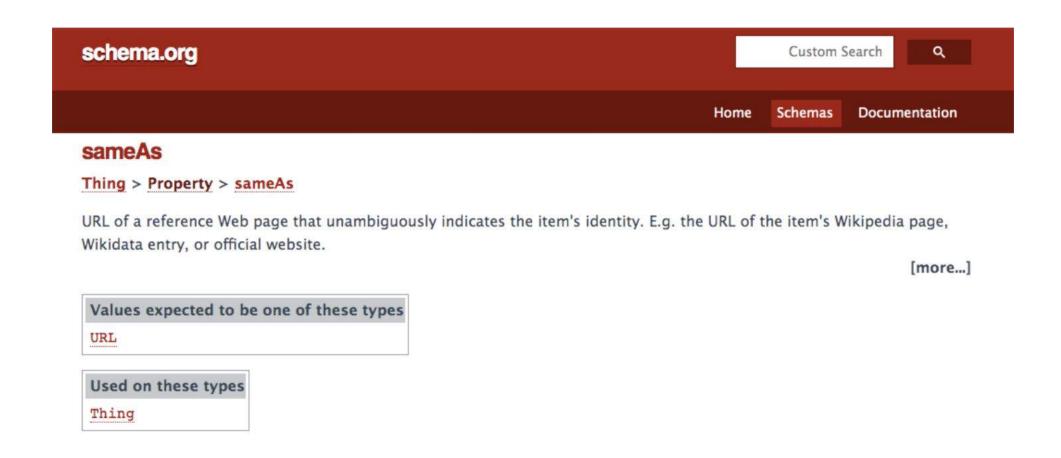
data-vocabulary.org schema deprecated

We recommend that you fix these issues when possible to enable the best experience and coverage in Google Search.

Fix Breadcrumbs issues

# Entities often have many surface forms

#### Schema:SameAs and OWL:SameAs



### SameAs Seems To Be Effective





Home

Profiles

Research Units

Research Output

Datasets

Activities

\*\*\*

#### On the Impact of sameAs on Schema Matching

Joe Raad, Erman Acar, Stefan Schlobach

Artificial Intelligence (section level), Artificial intelligence, Knowledge Representation and Reasoning

Research output: Chapter in Book / Report / Conference proceeding > Conference contribution > Academic > peer-review

BE consistent in ALL mentions of your brand name & ALL THINGS GENERALLY





Utilise 'known'
(popular) public
datasets & knowledge
repositories

Avoid conflict with 'known' (popular) public datasets & 'knowledge repositories'



Realise that well known knowledge repositories may be wrong





But they may be conceptually still be 'right'



They'll likely win in an equipossibility face-off



Leave no room for ambiguity where possible



## Location based ambiguity



# Semantic Heterogeneity is a problem locally

Entity Address (location) is a VERY Big Problem with entityoriented search

street number

Locality - city or town

street/route name, if detected

postal code, if detected

country, if detected

broad\_region - administrative area, such as the state, if detected

Narrow\_region - smaller administrative area, such as county, if detected

Narrow\_Region is VERY Problematic

### Inconsistent data from knowledge repositories

Inconsistent data from websites

Inconsistent data from searchers

**HUGELY SPLIT EQUIPROBABILITY** 

## Which County is Bristol in?

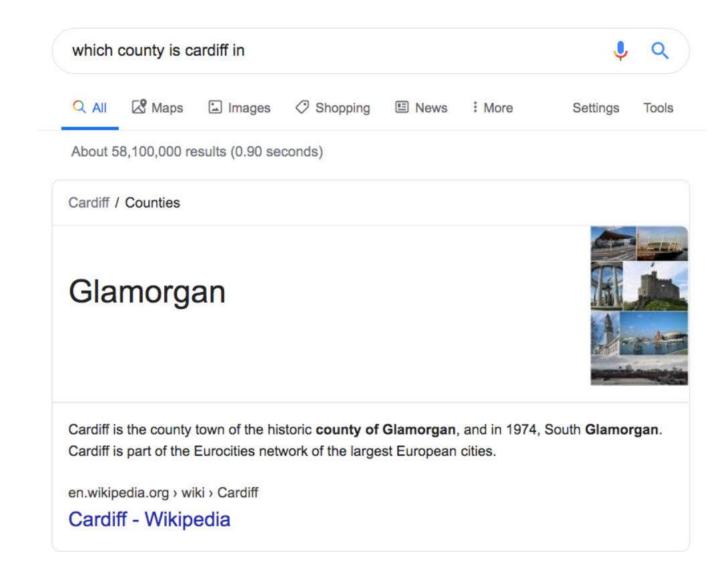


Bristol is
BOTH a
county and a
city



## In Scotland and Wales it's worse

## Which County is Cardiff in?



Cardiff is in South Glamorgan NOT Glamorgan



# But even humans are not so sure

which county is cardiff in







Cardiff, Welsh Caerdydd, city and capital of Wales. Cardiff exists as both a city and a county within the Welsh unitary authority system of local government. It is located within the historic county of Glamorgan (Morgannwg) on the Bristol Channel at the mouth of the River Taff, about 150 miles (240 km) west of London.

#### Cardiff | History, Facts, & Attractions | Britannica.com

https://www.britannica.com/place/Cardiff-Wales

Feedback

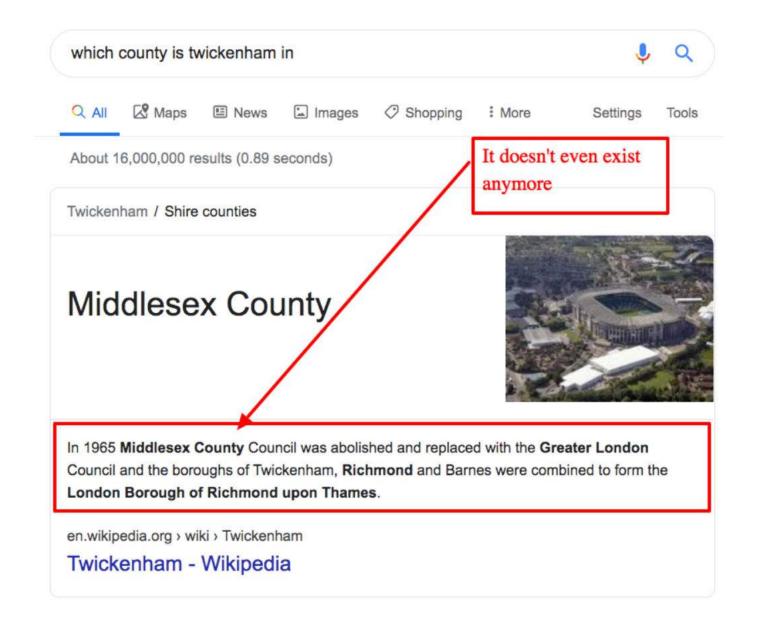
People also ask	
Is Cardiff in the Vale of Glamorgan?	~
Is Glamorgan a county?	~
Is Cardiff South Glamorgan?	~
Does Mid Glamorgan still exist?	~

Feedback

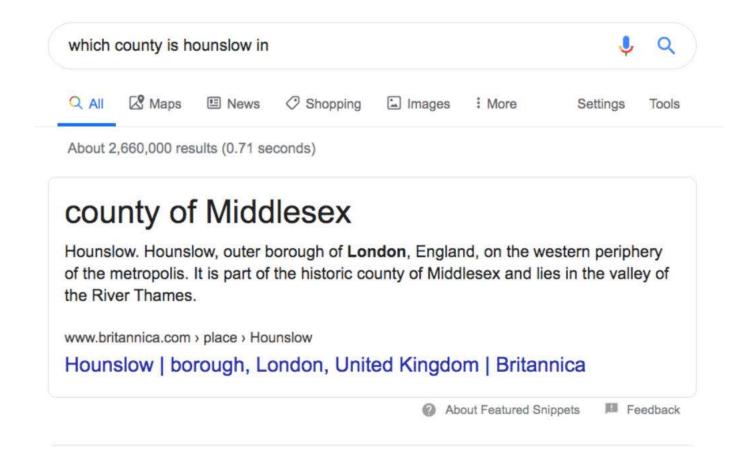


### Google Does Not Understand the Word 'Historic'

What about counties that don't even exist any more?



# At least this one mentions London as well as Middlesex



## Everyone... Is confused

which county is hounslow in



Feedback

en.wikipedia.org > wiki > Hounslow •

#### Hounslow - Wikipedia

**Hounslow** is a large suburban town, and the principal town of the London Borough of ... OS grid reference · TQ140760. • Charing Cross, 10.7 mi (17.2 km) ENE · London borough · Hounslow · Ceremonial county · Greater London · Region.

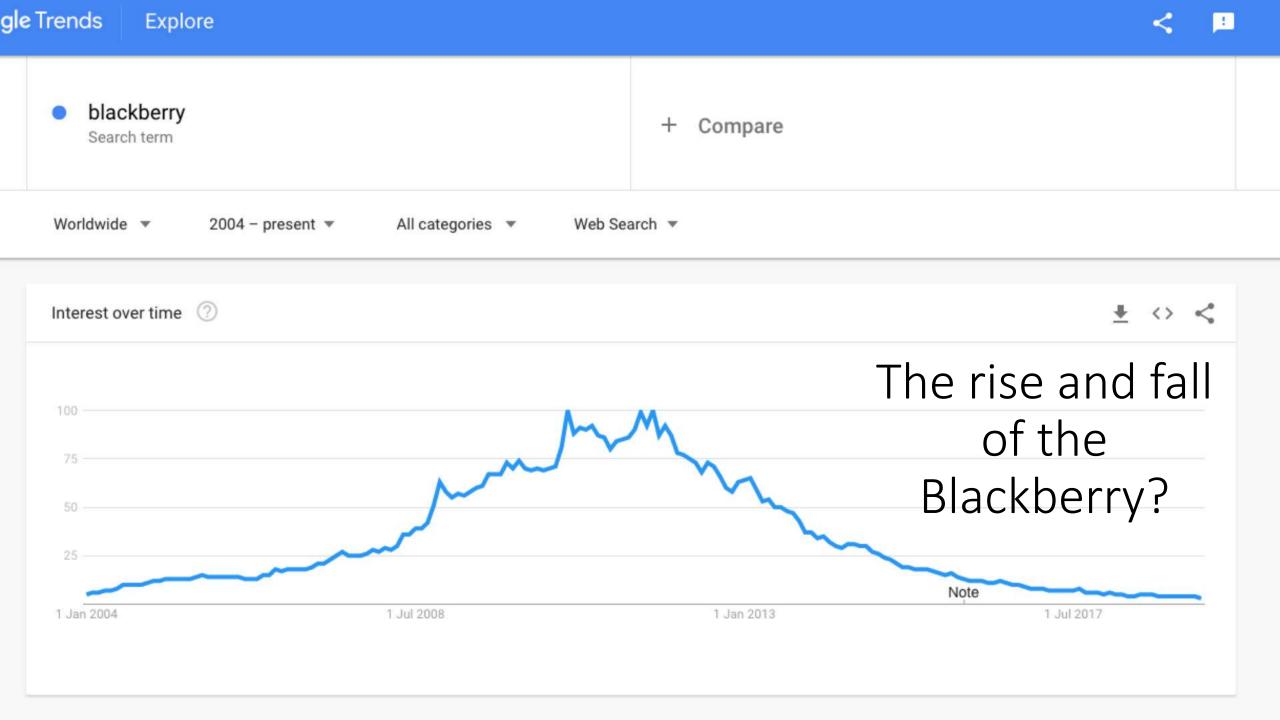
Ceremonial county: Greater London UK Parliament: Brentford & Isleworth, Feltham & ...

London Assembly: South West Sovereign state: United Kingdom

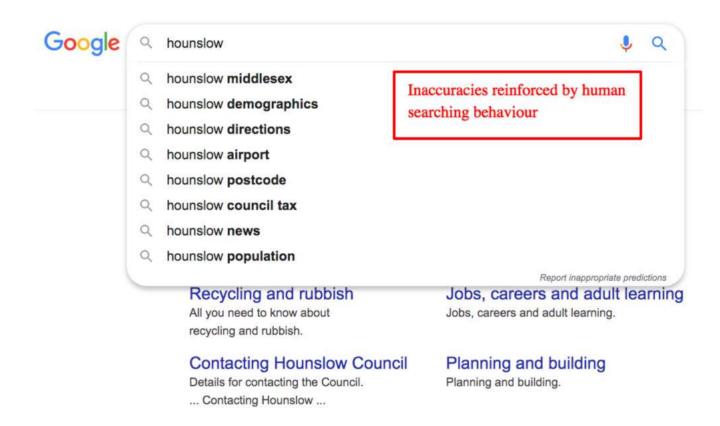
London Borough of Hounslow · Hounslow Heath · Hounslow railway station



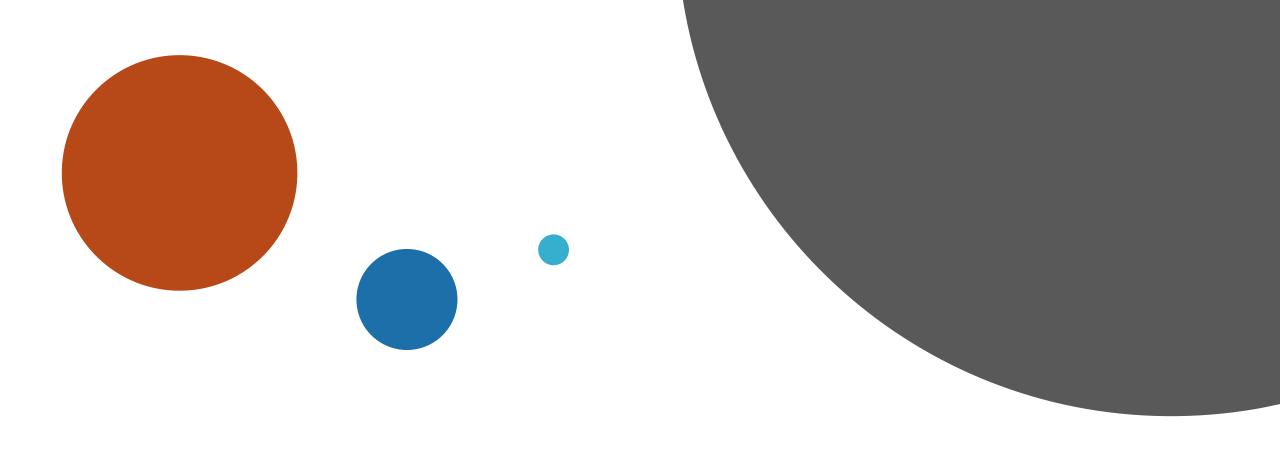
The passage of time adds new meaning to queries sometimes too



Older humans probably keep ambiguous county + town combinations alive



# Maximise the 'Local' Opportunity



In location focused pages adding a postcode could be much more valuable than adding lots of words

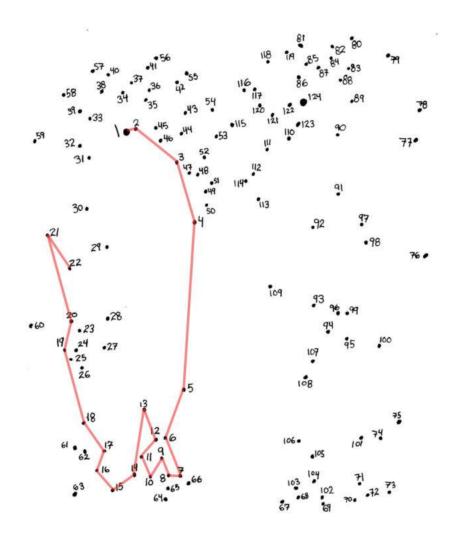
# Contextual relatedness in local spaces is proximity-based

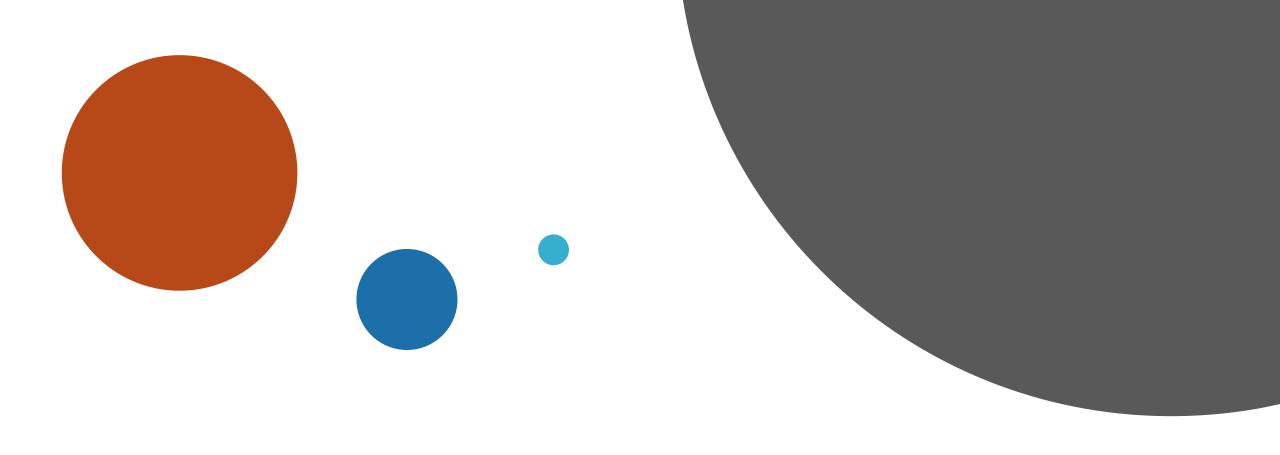


# AreaServed Schema & Internal linking by Proximity (e.g. lat & long) is powerful



## Align ALL the dots





### Most Importantly -Be Consistent

### Keep in Touch

- @dawnieando
- •@BeBertey











### Some Take Aways

