

HOW TO RESEARCH A SUBJECT

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I used to be paid to organise information and write a report - usually on a fixed contract (often for a decent amount of money, too). So the faster I got across the information, the faster I organised it, the better I got paid per hour. I'm going to tell you how I did it so you can use it for your own writing.

INTRODUCTION

Many times during a student's career they have to write an essay or assignment on a subject. Usually one they know little about. And usually there will be a title or question – although sometimes the student gets to pick what they want to do.

Sometimes the tutor will give them pointers where to look (references), which helps.

All have the same problem – extracting the nuggets of information from a mass of information, and discovering some sort of logical order which defines the essay.

The solution is much the same whatever you are asked to do.

(There are doubtless several ways you can do this – you will probably develop your own way in the end – but here is how I do it. And it works.)

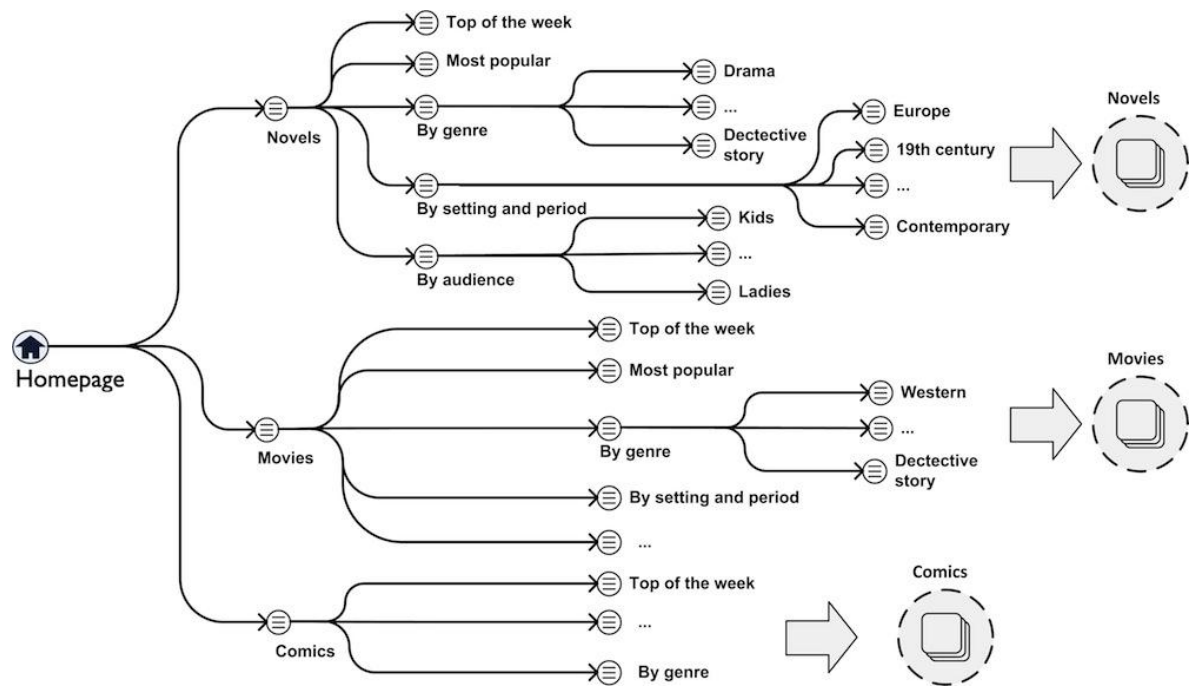
HOW INFORMATION IS ORGANISED

First let us look at the way a field of information is organised. There is usually a central theme running through the information, with branches and sub-branches into different subjects.

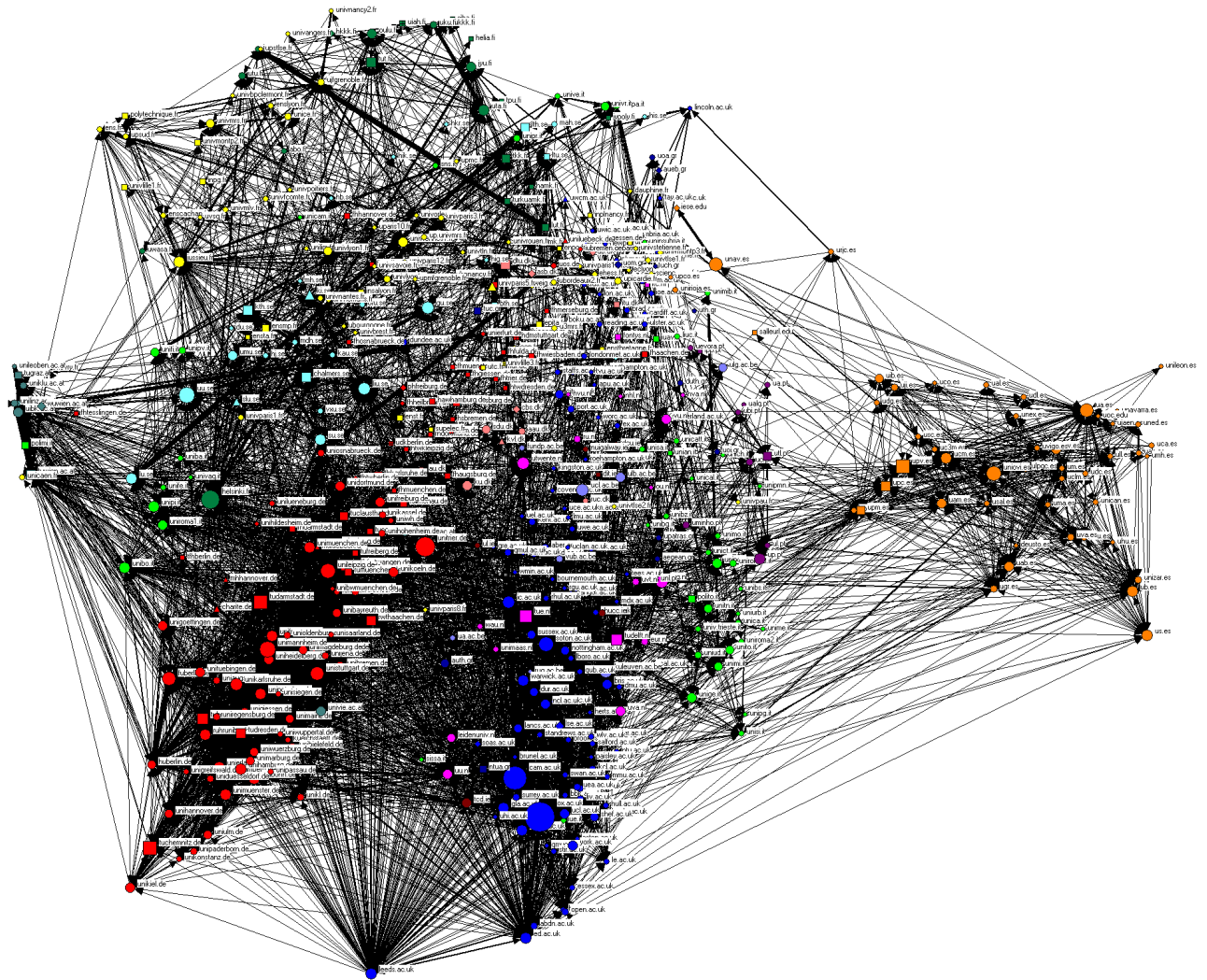
For example in cardiology there is a central theme of how the heart works, what goes wrong with it, and how you treat it. Sub-branches include the various types of cardiac problem (ie heart failure). Within each sub-branch is physiology, pathology, epidemiology and treatment. They in turn have their own sub-branches and so on.

Pretty obvious, but this structure is what you're after.

Here's a trivial example to do with organising a web page. This is what you're aiming for by the time you start writing – a clear hierarchical organisation of facts.

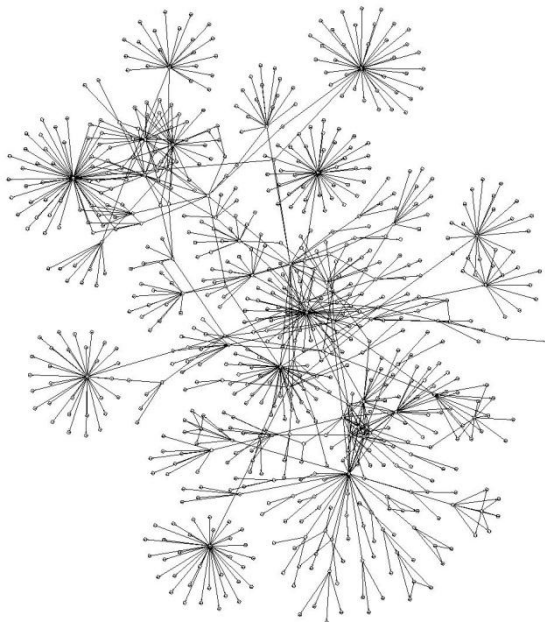


It usually gets a bit more complicated than this. This is a diagram of part of the information on the web. It could be a branch of medicine.

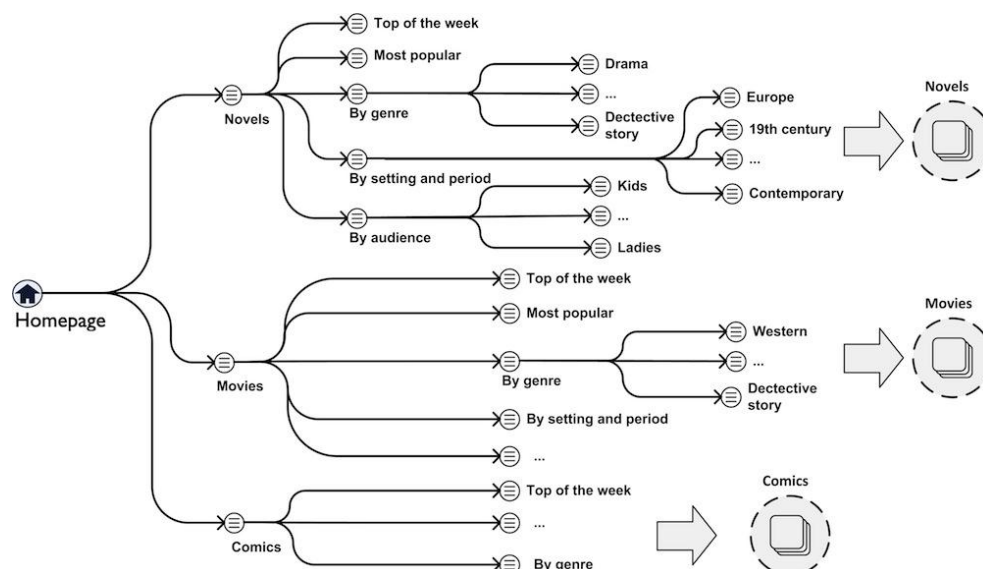


You can see there are multiple connections – main links, and smaller ones.

What you would find on a smaller scale – the scale on which you are going to write your essay - might look like this:



When you find this sort of structure, you want to distil it into this. Then you can write about it.



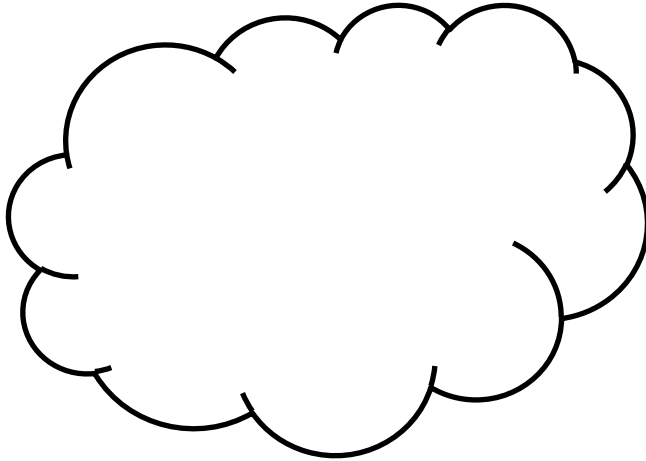
To get there is a straightforward logical process which always gives you results and doesn't take all that long. I quite enjoy the search because I know where it's going.

FINDING YOUR WAY INTO A SUBJECT

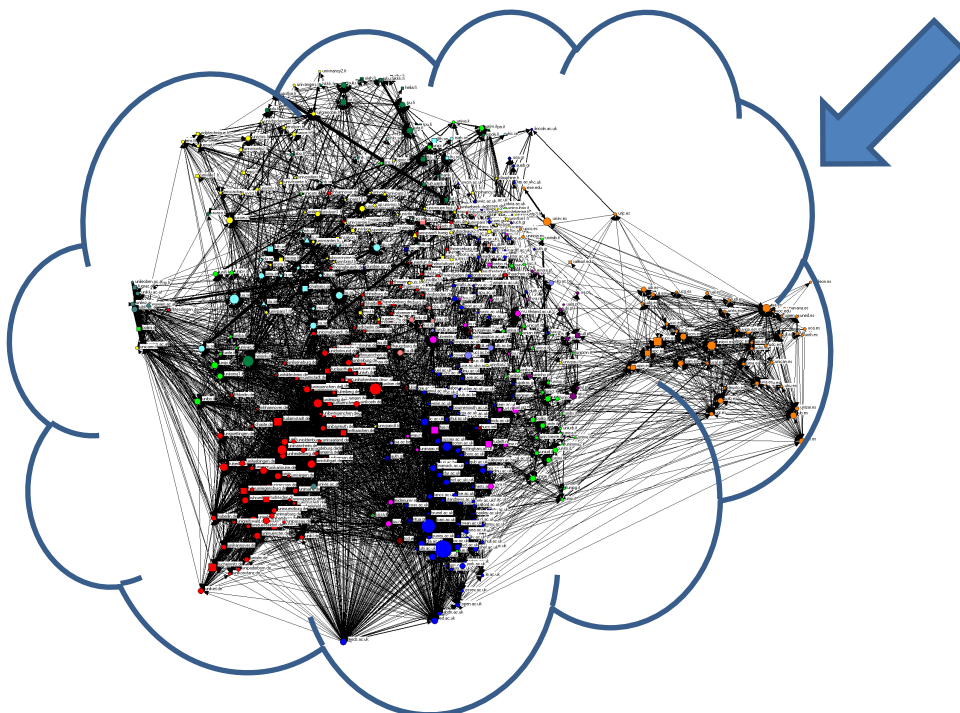
So, out of that mass of information you have to extract a structured set of facts.

I'm going to tell you how to get into the information quickly, and make a logical structure as you go. The key is to use other peoples' reviews and summaries to tell you how the facts are organised, while at the same time making your own structure. When you've finished you will find your essay will more or less write itself:

To start with, what you know of the subject might look like a foggy cloud.:



But of course it is really like this. And the arrow represents you, approaching a cloud of facts. Don't despair.



Assuming you know nothing, here's how to discover the structure quickly:

START WITH THE INFORMATION YOU ARE GIVEN AND STICK TO IT

This is very obvious, but if you are given a title, analyse it carefully and stick to it. Be very clear what you are going to write about, because you are usually not given marks for writing about something else.

For example if you are asked to 'outline the treatment for cardiac failure in diabetics' you are wasting your time talking about the whole field of cardiac failure in other conditions. It might be attractive, easier, and more interesting to write about cardiac failure in chronic disease, including diabetes, but that's a waste of time and effort. Don't do it (you'd be surprised how many people do). Stick to the topic.

The important thing here is that the topic defines your goal. Instead of approaching a daunting mass of facts think of it as a mass of stuff which is irrelevant, but buried in there is what you want. You know what you are looking for – you just push the useless stuff aside very quickly.

USE ANY REFERENCES THE TUTOR GIVES YOU – THEY ARE THERE FOR A REASON

Tutors want to make their life easier, trust me. What a tutor wants to see is a student who sticks to the point, writes clearly, and does what is asked.

And if you think tutors sit down carefully analysing every word written and agonising over your deathless prose, you're wrong. They don't – they read your essay, see if it makes sense, see if it gets to the point, see if it is readable, and give you a mark based on all of that.

Yes, I know - some saintly types go into excruciating detail, takes them hours, they feel better. Most tutors don't. Get over it.

When setting an assignment tutors give you references and pointers because they want you to get to the heart of the matter quickly. Out of that vast cloud of information they want a relevant essay which reads easily. They don't want to read waffle.

So if a tutor gives you information, make sure you use it. And if you're smart, make sure you use all of the phrases and subjects you have been given. Most likely you are an average student with an essay to write, and the tutor is an average tutor with an essay to mark. You might be some kind of genius, of course, but if you are you won't be reading this, will you?

Make it easy for both of you – if you use the phrases and subjects you have been given you've got to be on the right track.

USE THE WEB WISELY

Use web engines like Google, obviously. But use it wisely – you can speed things up by advanced search techniques, using google scholar, and using various specialised search engines.

Most people (me included) are a bit lazy and just type in what you want to find and hope for the best. This works, but if you get slick at it there are better ways.

Here are 3 sites that explain what the different search engines do, and teach you how to search better:

Excellent start, tells you all you need to know:

www.nla.gov.au/pathways/pthw_global.html

Berkely's library tutorials on the internet – good stuff:

<http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html>

Google's search help:

<http://support.google.com/websearch/bin/answer.py?hl=en&answer=134479>

METASEARCH ENGINES

See discussions about them in the above links – you can search a number of engines at once.

You can also use specialised search engines (like Cochrane database).

And if I'm running out of ideas I use Bananaslug, www.bananaslug.com which throws in a random word with your search. You'd be surprised what you get.

SPEED UP YOUR SEARCHES – ORGANISE AS YOU GO

When I'm searching, I speed things up by opening multiple tabs at once (usually Ctrl+click a link). Sometimes I have 30 tabs going. Then I flick between them, picking out the good ones and losing the bad ones.

I also use bookmarks, sometimes nested several deep as the subject unfolds.

Now the really important bit - make a structure. I usually save the good pages in a file. As I begin to understand the subject I make sub-headings. The structure of how you save the pages defines your essay. If you get the headings right you get the essay right.

Note that, as time goes on and you understand more about the subject you will re-structure the headings, until finally the whole thing falls into place.

Somewhere along the line, usually twice or three times, I make 'spider diagrams' of what I am doing. Really useful – see my document on "How to speak in public without bursting into tears". The final spider diagram is the essay structure for me.

EXACTLY HOW TO SEARCH

- 1) Assuming you don't know much about the subject, your aim is to discover one of the main 'trunks' of information, then get a feel for the sub-branches. This is what you will write your essay around. Basically an essay is about putting information in context and talking about it.

Keep looking for the review articles and the summarising references. Each paper usually has some kind of reference list. Look at it, and, even if the paper is useless, you will often find good stuff in the references.

You can also use a citation index – this can be a quick way into a subject. Papers with the most citations are generally the key ones.

- 2) Flick through web pages quickly, classifying them as you go. Don't stop. In the first half hour or so just read and grab everything. You will soon start to home in on the main papers or the main reviews, or the main summaries. It doesn't take long, and after a while you will have a series of papers/pages which define your subject for you.
- 3) Then you can start filling in the gaps by selecting interesting references from the papers in the reviews. Dissect the subject into finer detail, always keeping to the topic of your essay. Record what you do as you go. If you're asked for a summary you will stop here.

- 4) If you are asked for an opinion this is the stage where you can begin to form one. Start thinking about the structure you have discerned and where your opinion fits in.

Look back at the diagram of information inside the cloud. It doesn't matter where you go into the cloud, if you look for the main connections you soon start to see the structure. Once you get the structure, you start putting the smaller branches in place. The facts look after themselves because it's the facts which you use to define the structure.

By analogy it's like picking fruit off a tree. If you define where the fruit came from, you slowly build up a knowledge of the structure of the tree. When you are writing an essay, it's the structure of the knowledge you're after because you use that to put structure into your essay.

HOW LONG DO YOU NEED TO GO ON SEARCHING FOR?

What I have outlined is a strategy which, for me, is always fast and successful.

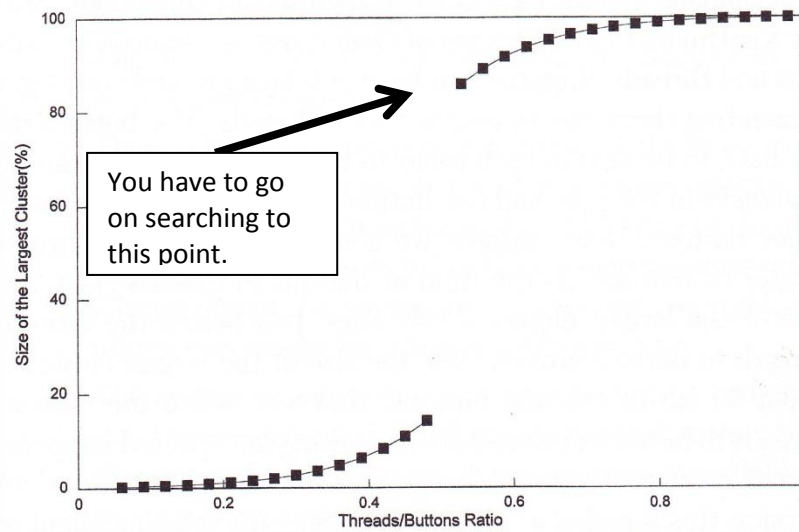
But remember it takes time, and to start with you don't think you are getting anywhere. People often give up because they think they are wandering around in a fog of facts with no discernable path. They stop and write – garbage.

You must keep going until get to the point where it fits together, and this happens all of a sudden. I'll show you why – it's just mathematics.

If you take a random series of objects (buttons for example), and join them randomly together with a few connections (threads for example), you get a few 'clumps' of connected buttons. Do it again. Next time the clumps get a bit bigger. And bigger.

There comes a point when the number of connected buttons (or in your case the connected nuggets of information) becomes large. Things suddenly fall into place.

Phase Transition: Threads/Buttons Ratio



So now it should be blindingly obvious what your search end-point is and why it seems as if you're getting nowhere to start with. Keep going until you see the connection between all your facts.

WHAT DO YOU DO WITH ALL THIS?

At the end of your search you should have got a series of nuggets of information organised in a structured way. You also have a list of helpful summary references telling you how it all hangs together.

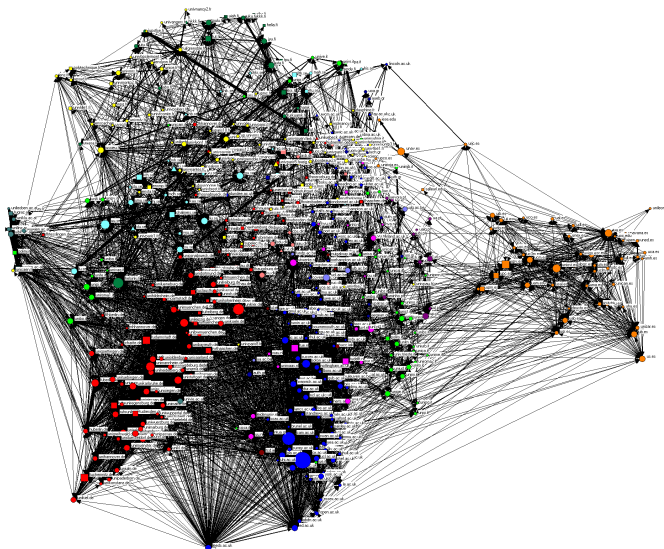
Then you need to think about how you are going to tell a story around what you have found. Essays are all about stories.

That isn't so hard either – read my document on “How to write an essay” and you'll get the idea.

AND FINALLY

I've done this for years. I can tell you it works and it's fast.

LEARN TO GO FROM THIS:



TO THIS:

