

User behaviour on the web, heuristics & design principles



Hick's law

- **The time it takes to make a decision increases as the number of alternatives increases**
- However, if lesser options involve more work, such as reading sentences, the law may not be applicable.
- When you add page loading time, it often becomes much quicker to have more options (hence the preponderance of "information-dense" Web sites around! e.g. www.bbc.co.uk)

Flexibility-Usability trade-off

- As the flexibility of a system increases, the usability decreases
- Flexible designs that perform more functions are harder to learn because of increased complexity



Fitt's law

- The **time required to move to a target is a function of the target size and distance to the target** e. g a smaller, more distant target is harder to acquire than a closer & larger target.
- Here's an [interactive demonstration of Fitts Law](#), and an account of how it was used to [guide some of the design of Microsoft Office 2007](#)

Small button

Large button

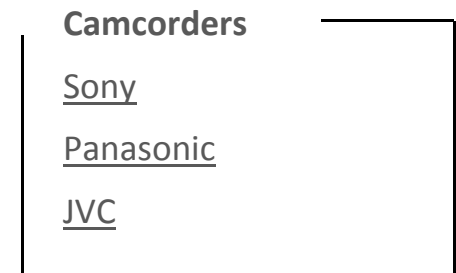
Information scent

- Based on studies from Xerox PARC on **“information foraging”**.
- When hunting for information, people follow the **same tactics as animals hunting for food**.
- In an information-rich environment people always make **instant analyses of the cost versus the probable benefit** of following a trail.
- **Some links “smell” more strongly** of what you’re looking for than others.
- **Their benefit seems more certain**. So the effort is more worthwhile.

Information scent

The factors that improve information scent are:

- **Straightforward** links with no puns or made up words
- **Longer link phrases:** don't be scared of using more words for clarity
- **Explanatory information associated with the link** (but be careful what form that information takes). E.g. TITLE attributes in HTML.
- **Nearby links** that have strong scent.
- **“Trigger words”:** The words people tend to think of first when doing a particular task.
- **Adding Boxes & titles** to the list:



An information scent example

Here's a navigation bar...

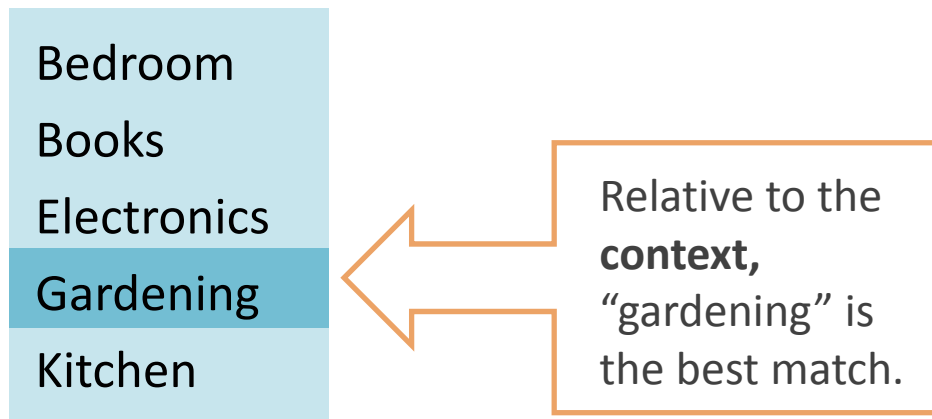


- Bedroom
- Books
- Electronics
- Gardening
- Kitchen

Task: “Find Wellington boots”

An information scent example

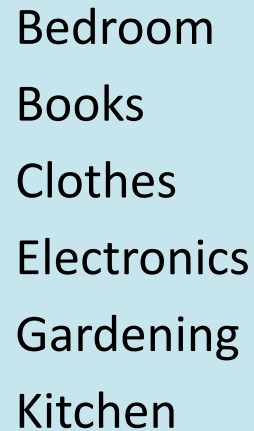
Here's a navigation bar...



Task: “Find Wellington boots”

An information scent example

Here's a different navigation bar...

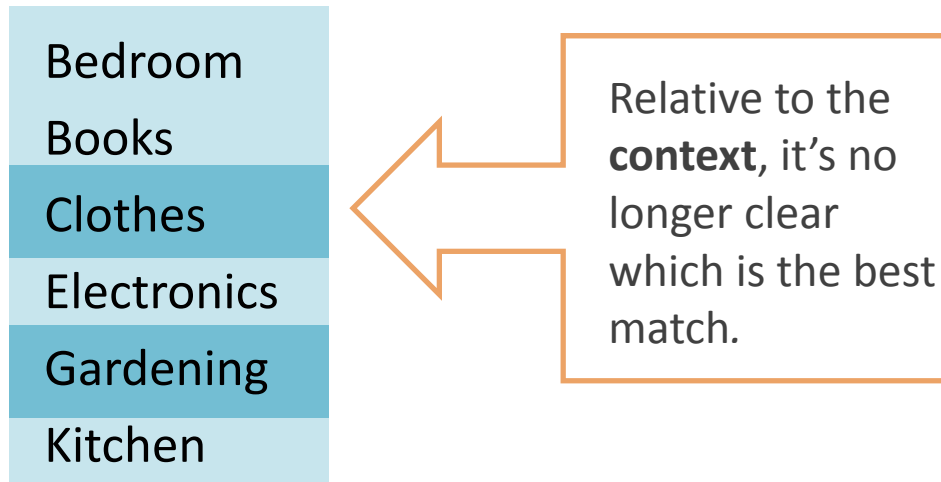


- Bedroom
- Books
- Clothes
- Electronics
- Gardening
- Kitchen

Task: “Find Wellington boots”

An information scent example

Here's a different navigation bar...



Task: “Find Wellington boots”

An information scent example

Here's yet another navigation bar...

Bedroom: Quilts, pillow, covers...

Books: Bestsellers, factual, education...

Clothing: Jumpers, coats, shoes...

Electronics: CD players, TVs, Hi-fi...

Gardening: Seeds, plants, pots...

Kitchen: Pots and pans, cutlery...

Task: “Find Wellington boots”

An information scent example

Here's yet another navigation bar...



Task: “Find Wellington boots”

Induction: Examples vs. descriptions

- Human brains are very good at inducing general rules from specific examples.
- We often find it easier to induct information than to read abstract descriptions.



Induction: examples vs. descriptions

- Examples are often better than descriptions.
- If you choose good examples, you'll score direct hits (trigger words).
- But even if you don't score a direct hit, it's easier for people to induct than to read descriptions.



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Scanning

We often scan pages, picking out individual words and sentences.

“In a recent study John Morkes and I found that 79 percent of our test users always scanned any new page they came across; only 16 percent read word-by-word.”

Jakob Nielsen

Help users scan read by using effective text hierarchy, good layout, and writing for the web guidelines.

Satisficing

- It's often preferable to settle for a satisfactory solution, rather than pursue the optimal solution
- Therefore usually we don't inspect all the options. **We choose the *first* option that seems *good enough*.**

Why?

- We're in a hurry.
- Not much penalty for guessing wrong.
- Experience on the Web teaches us that careful thought doesn't help.
- Guessing is less work.

Muddling through

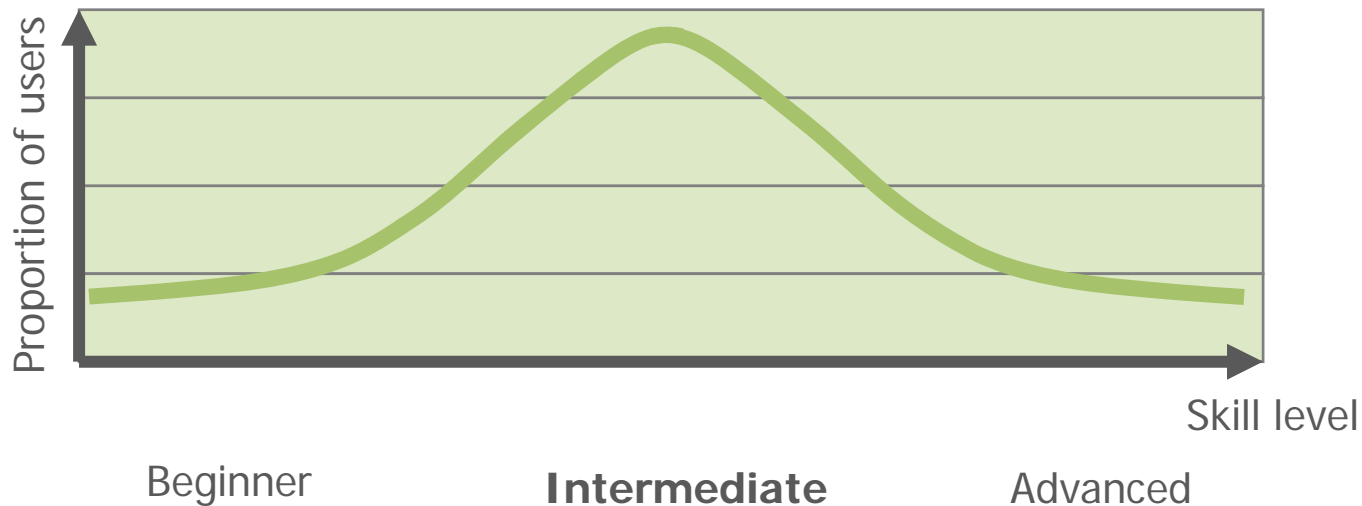
“Paradox of the Active User”: People rush in, then suffer productivity losses in the longer term because they don’t really know what they are doing.

Why do we muddle through?

- People **don’t care enough** to actually go to all the effort of reading the manual.
- People stick with whatever way they first discovered of getting the job done, e.g. Google gets thousands of searches every day for full URLs like *www.bbc.co.uk*.

The perpetuate intermediate

Because we like to muddle through, most of us stay intermediate users all our lives.



..but here are some myths:

- Large pages are bad
- All content must be reachable in three clicks
- Fewer pages in the transaction = higher conversion
- Navigation must contain 7 +/- 2 items

Large pages are ok...

... if the page satisfies user goals

Jared Spool studied user perceptions of ten websites.

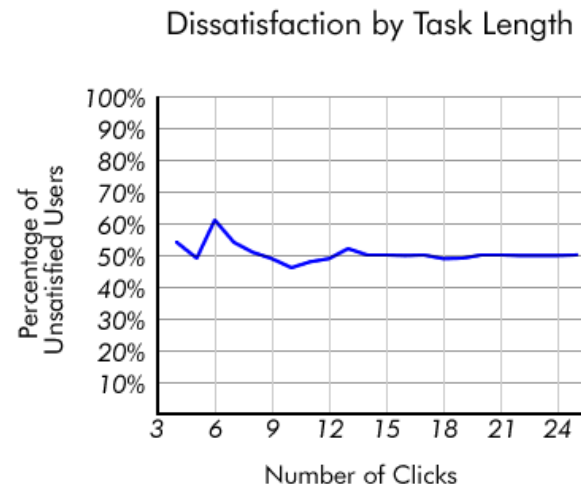
- There was little correlation between people's perception of download time and the actual download time.
- So on some sites, pages downloaded slowly, but users said the pages downloaded sufficiently fast.
- There *was* a correlation between how successful people were and how fast they said pages were.

Conclusion: (download) time flies when you're having fun!

No scientific support for the 3-click rule

“[User] complaints aren't actually about the clicks. They are really complaints about failing to find something. When users find what they want they don't complain about number of clicks.”

Jared Spool



Enough info to make a decision:

“Shoppers could not ascertain enough information from the product list, so they clicked back-and-forth between the list and multiple individual product pages before deciding whether to select a product for purchase: ‘Pogo-sticking!’

Jared Spool

When users comparison-shopped using pogo-sticking techniques, they purchased 11% of the time. When they used product lists to evaluate products, they purchased 55% of the time.

Seducible moments:

Crosslink at the right time, with relevant messages

“There are specific moments where designers are most likely to influence a shopper to investigate a promotion or special offer. Most of the time, these moments come after the shopper has satisfied their original mission on the site.

If we identify the key seducible moment for a specific offer, we can often see over 10 times as many requests.”

Jared Spool

Design pages not to need instructions

- Make the title into the instructions.
- Make it obvious what needs to be done from the size and arrangement of items on the page - use “affordances” or “calls to action”.
 - Eg 1-2-3 or arrows.
- Rely on our inductive reasoning abilities