Postgraduate Certificate Web Design and Development 30 January 2010

WDD3.3
Usability & Evaluation

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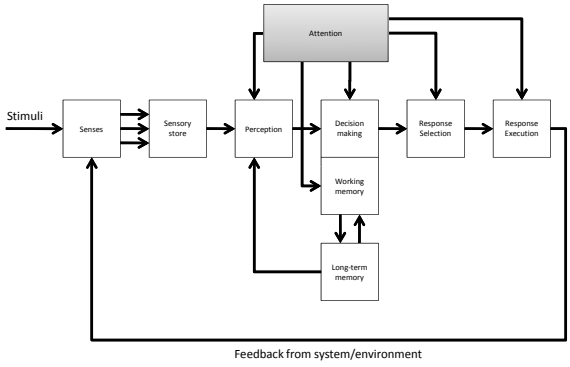
Recap: *What you've learned in the last session*

- Translating user research and business requirements into **conceptual solutions**
- Prototyping at the right level of fidelity – **storyboards, sketches** and **wireframes**
- **Classifying** and **structuring information** in a way **meaningful to users**
- Creating navigation systems – **showing users where they are, where they can go, where they have been**
- Creating content that is **relevant, succinct, scannable, legible and credible**
- Homepages that **explain proposition, create clear entrypoints & CTA's and give examples of content**
- **Interaction design**: task flow, action/reaction, behaviour, state and error avoidance

2.3.1 Psychological basis of usability

We need to design for limited cognitive hardware

A model of human information processing (Wickens, 1992)



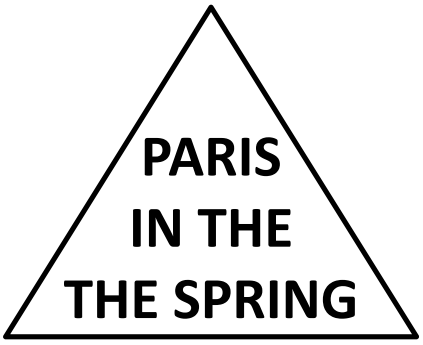
Sensation & Perception

Sensation: Stimuli impinge on the senses and give rise to neural events.

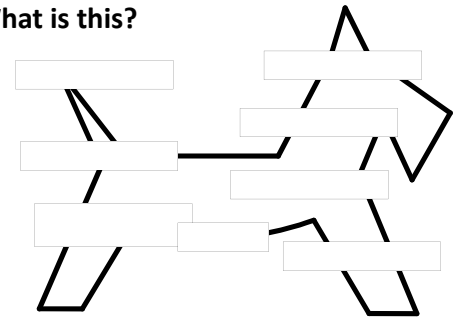
- **Sensory memory** holds stimulus for a very brief period of time.

Perception: Giving meaning to the event that produced the sensation.

- **Automatic, rapid and requires little attention** unlike cognitive processes that start when perceived information is processed.
- **Bottom-up processing** is driven by incoming data/stimuli
- **Top-down processing** is driven by prior knowledge



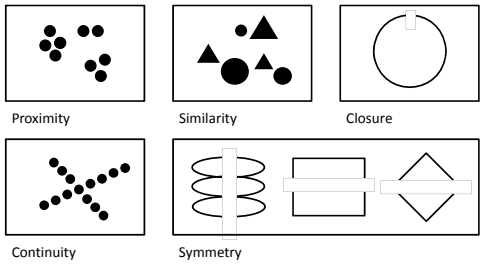
What is this?



What does this say?

THE CHT

Gestalt principles



It's important to be aware of these principles and to consider them in your design!

Design implications

- **Structure:** Help users understand what belongs together by chunking similar and separating different items
- **Consistency:** Help users apply previously acquired knowledge from LTM. (consistency within the UI and consistency with the world)
- **Visibility** and **affordance:** Show all required information and use controls that are self-explanatory.
- **Feedback:** Communicate the consequence of an action

Prominence
indicates importance

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Big things
are perceived more important
THAN SMALL ONES

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Proximity-compatibility principle

Things that are near each other are presumed to be similar

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Things that are separated are presumed to be different

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Difference can also be indicated using visual contrast i.e. colour, size, style

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Headings summarise adjacent content

Painfully obvious isn't it?

But for it to work, headings must be instantly recognised as headings.

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Lack of distinction or visual clutter undermines their function

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Aliquam eu dui. Nam ullamcorper magna id nisi.

Try to remember this:

K F J A S A N I B F O T N A S P U

Now this:

KFJ ASAN IBF OTNA SPU CKF

Now this:

JFK NASA FBI NATO UPS KFC

Memory

Short term (working) memory

- Size **7 ± 2 chunks** (Miller, 1956), consists of:
- **An auditory component** [the phonological loop]
- **A visual component** [the visio-spatial sketchpad]
- Each has its own store & its own rehearsal mechanism

Long term memory

- Thought to be organised on the basis of **meaning and semantics**
- **Schemas:** Organised knowledge structure to reflect knowledge, experience, expectations. Unconscious routines for commonly performed actions
- **Activated schemas** stand ready to execute on cues from the environment

Design implications

- **Visibility:** Minimise what users need to remember ("the knowledge in their head") and show all required information on the page ("the knowledge in the world")
- **Consistency:** use a language and imagery that conforms to user expectations and previously acquired knowledge; allowing users to connect existing knowledge with new one.
- **Simplicity:** avoid information overload.
- **Concrete things are easier to remember** than abstract ones.
- **Examples and mnemonic devices** help us remembering things: see Dyson website

Attention

Selective Attention

- Attention can be selective (e.g. listening to a particular instrument in an orchestra)

Divided Attention

- **Criteria:** Task difficulty, Task similarity & Practice
- Practice leads to processes becoming automatic
- Differentiate between **controlled and automatic processes**
- **Controlled:** Limited capacity, requires attention, flexible
- **Automatic:** No capacity limitation, require no attention, difficult to modify

Check this: Card trick

Design implications

- We have **limited attentional resources** at our disposal. Use visibility, affordance, structure, feedback and consistency to help users shift attention between different tasks and aspects of the page and alert them of changes.
- **Simplicity:** Don't present too many things at once.
- **Tolerance:** Help users recover from slips of their attention and help avoid errors.

In Summary

The human information processing system can be seen as:

- **A general purpose pattern recogniser**
- **With limited information processing capacity**
- **Using heuristics** (rules of thumbs) to simplify the information processing load
- **Acting as a satisficer** rather than an optimiser

Reason (1990)

In Summary

- We make **predictions based on previous experience,** or, in other words, **we see what we expect to see.**
- We use Gestalt principles to interpret what we see, and therefore **it is easier for us to perceive a structured layout.**
- We have limited working memory, therefore **it's easier to recognise than recall** for us.
- We use **habits to help us reduce mental effort,** which means that on the web, we often do things in automatic mode rather than consciously paying attention.
- With our limited **attentional** resources we can only give real **attention to one thing at a time.**

In Summary

Design principles to apply:

- **Visibility** of information and controls
- **Affordance** and correct **mapping** of controls
- **Feedback** from the system
- **Structure** of the design
- **Consistency** with user expectations and the world
- **Simplicity** of the design
- **Tolerance** of the system to errors

(Norman 1988)

2.3.2 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 a 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)
- Think of the impact of structure, typography etc when designing pages with many options

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:

Camcorders
Sony
Panasonic
JVC

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…

Bedroom
Books
Electronics
Gardening
Kitchen

Relative to the **context,** "gardening" is the best match.

Task: "Find Wellington boots"

An information scent example

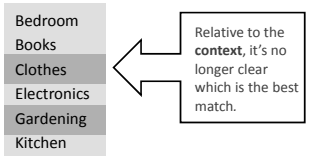
Here's a different navigation bar…

Bedroom
Books
Clothes
Electronics
Gardening
Kitchen

Task: "Find Wellington boots"

An information scent example

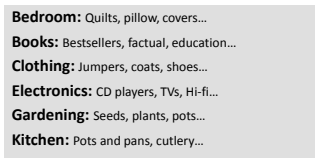
Here's a different navigation bar…



Task: "Find Wellington boots"

An information scent example

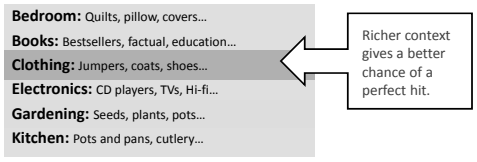
Here's yet another navigation bar…



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.

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.

http://www.useit.com/alertbox/9710a.html

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

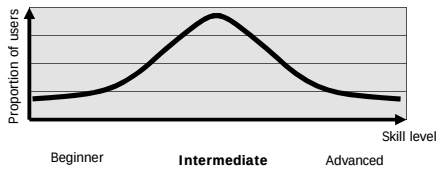
"Paradox of the Active User": People rush in, then suffer productivity losses in the longer term because they don't really know what they are doing.

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.

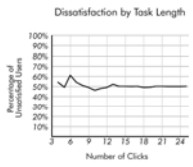
- There was little correlation between people's perception of download time and the actual download time.
- So on some sites, pages downloaded slowly, but users said the pages downloaded sufficiently fast.
- There *was* a correlation between how successful people were and how fast they said pages were.

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

2.3.3 Layout & Typography

Good layout and typography matters

- We know that most of the time users **scan-read** pages
- A **well structured layout** makes web pages easier to use, design and code!

Chunking and aligning content

- **Working to a grid** makes content easier to read (and to design)
- **Justifying items to the left** of each column enables users to scan much faster for what they are looking for
- Chunking your content and navigation into panels allows for a **modular approach** when creating content and designing functionality

What is Lorem ipsum?

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Where does it come from?

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).

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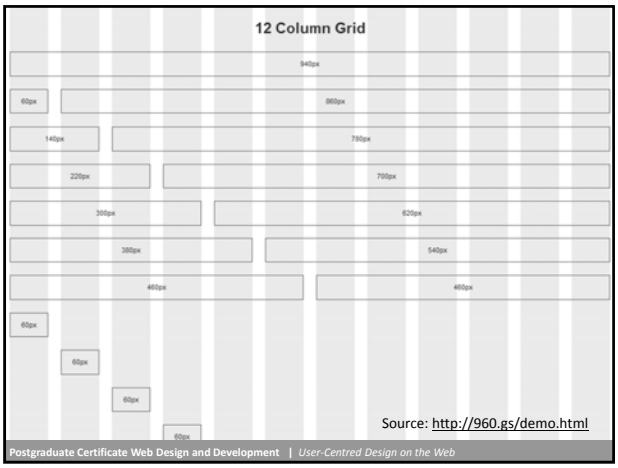
Grids

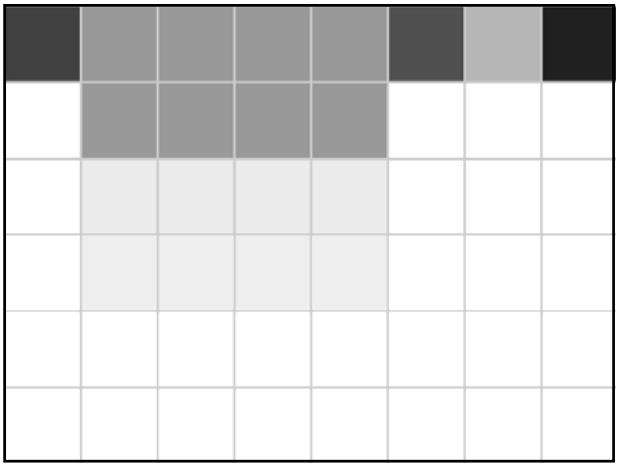
- **A 960px wide** grid is a good choice to design for a 1024px wide screen resolution
- It easily divides into multiple columns
- Using an underlying base grid of 10px helps you avoiding having to deal with awkward number (such as 189px column as opposed to 180px – easier to code
- Keep a gutter between your text columns
- More on gird systems:
  Five simple steps to designing grid systems

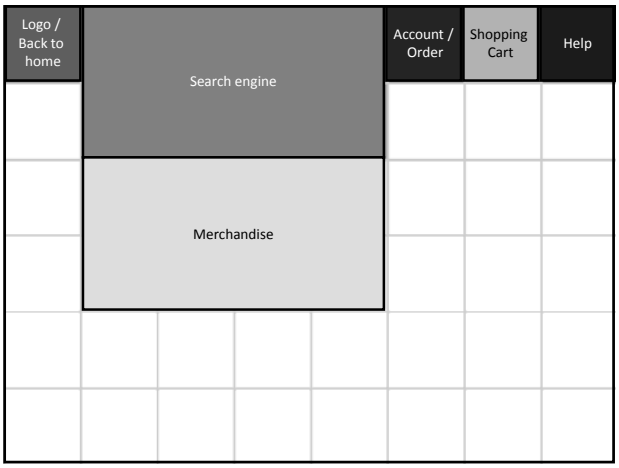


Source: http://960.gs/demo.html

Leverage user expectations

- Researchers at University of Wichita (2002) ran a study where they asked people to indicate on a grid where they expected different page elements to appear.
- Lets look at one of the results for user expectations of an e-commerce site
- What do *you* think the different colours represent?





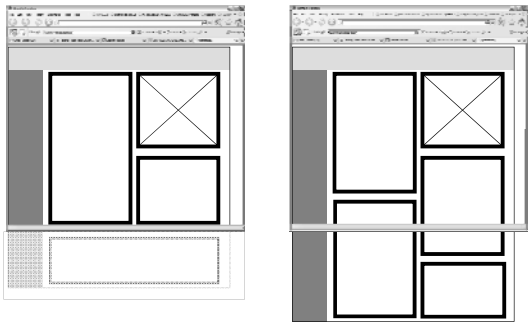
Long pages, short pages and scrolling

- In early days of web people often did not scroll - not realising there was more "below the fold. "
- Designers would attempt to cram content above the fold, often making a mess.
- But things have changed – scrolling is now "normal behaviour".

Long pages, short pages and scrolling

- **People forget to scroll when:**
  - They don't expect to find anything lower down
  - There is a "scroll stopper" that makes it look like they have seen everything
- **Solutions:**
  - Make content extend below and peak above the fold
- **Where's the fold?**
  - Approx 600 -170 = 430
  - Approx 768 -170 = 600
  - But if you stagger content, you don't need to worry about exact pixel measurements

Scrolling



Text hierarchy

Having a good text hierarchy in place helps users understand the structure of the page:

Section Heading H1

Entries Heading H2

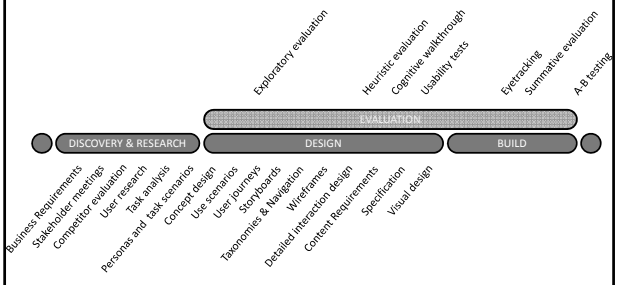
Tertiary headings H3

Other headed elements H4

More about this topic:
Five simple steps to better typography

2.3.4 Evaluation

Discuss: *Why evaluate?*



Evaluating with our without users?

Interviewing and observing users

- Usability testing **with real users is the most fundamental and useful usability method**
- Methods range from **informal testing to precisely controlled studies**
- Testing may be **quantitative** or **qualitative**

Using analytical methods

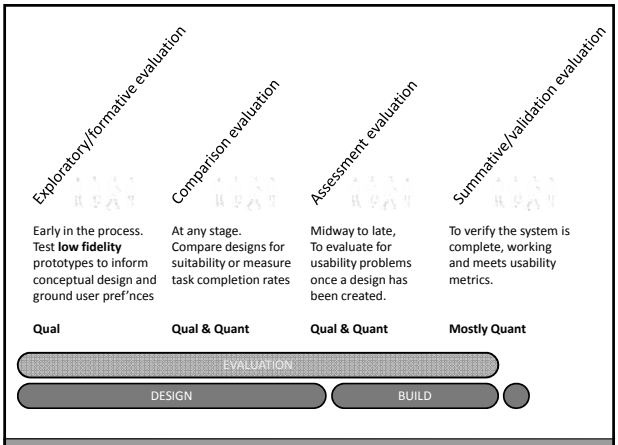
- You can also conduct a **heuristic inspection** against standard guidelines
- A **cognitive walkthrough** lets you check a user's journey
- Sometimes this is enough for an interim review

Evaluating with or without users?

- **Measuring user behaviour on a finished site**
  - **A-B testing** allows you to show two different versions of a website to users and see which one has better click-through rates
  - Using **eyetracking** techniques can provide an interesting take on what is seen on your site

Evaluating what and when?

- **Start early and low-fidelity** (paper prototypes, basic wireframes, rough design concepts)
- **Once you've got a more complete design, build a prototype** (HTML, Flash, Fireworks, Powerpoint, Axure) and test it.



The evaluation strategy

- **Why** are we evaluating? – **evaluation goals**
- Which usability **requirements** are we exploring?
- **What** are we evaluating?
- What **type of data** do we want to collect?
- What **constraints** do we have?

Without answering these questions you can't plan your research!

What to evaluate

- Evaluation goals can be identified from different sources:

- From the earlier **user research**
  - Can users understand the proposition?
  - Can users complete goals that are important to them?
- From the **client objectives**
  - Do users comprehend the client's objectives for the website?
- From the **design process**
  - To explore alternative conceptual models, IAs, visual designs, etc
  - To get user data to inform important design decisions

Some common usability evaluation goals

- **Comprehension**
  - do users understand the page/ site and their options?
- **Satisfaction**
  - Does the content and functionality of the page/ site meet user expectations?
- **Anticipation**
  - Is it clear what will happen next in the user journey?
- **Task success rate**
  - How often can users complete common tasks like purchases?

Task: *Think of your own project and formulate an evaluation strategy…*

Task: *Formulate an evaluation strategy…*

- **Why** are we evaluating?
- Which usability **requirements** are we exploring?
- **What** are we evaluating?
- What **type of data** do we want to collect?
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2.3.5 Heuristic evaluation

What is a heuristic evaluation?

- Heuristics are rules-of-thumb or guidelines about what makes a website usable
- The most common set of heuristics were developed by Jakob Nielsen in the early 90s
- Many different sets of heuristics exist for dedicated design domains
- They are a low-cost way of making sure that your site will avoid common usability problems by involving other people in critiquing your design

Nielsen's heuristics

- **Visibility of system status**
  - Always keep users informed about what is going on
- **Match between system and the real world**
  - Follow real-world conventions, using natural language & making information appear in a natural and logical order.
- **User control and freedom**
  - Don't box the user in. Support undo and redo.
- **Consistency and standards**
  - Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.
- **Error prevention**
  - Prevent problems from occurring
- **Recognition rather than recall**
  - The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Full article on Nielsen's heuristics

Nielsen's heuristics

- **Flexibility and efficiency of use**
  - Support shortcuts for experienced users
- **Aesthetic and minimalist design**
  - Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.
- **Help users recognize, diagnose, and recover from errors**
  - Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
- **Help and documentation**
  - Even though it is better to design a system that doesn't need documentation, if you have it make it focussed on the users' task and useful

Full article on Nielsen's heuristics

How to do a heuristic evaluation

- Get between 1 and 5 designers or researchers and brief them on the website. Give them a copy of the heuristics you're using
- Working independently, they review the relevant screens of the site against the heuristics
- In a workshop afterwards, they compare issues they found to agree a final set of prioritised usability issues
- You can also use the heuristics while you are designing as a sanity check, but others will always bring a more objective eye

Strengths & weaknesses

- Heuristics are quick to apply and have stood the test of time as principles for design
- But they are only a rule of thumb, they are not infallible
- Heuristics are only as good as the critical thinking of the person who is applying them
- No set of heuristics can address the all the criteria of your website
- But they are a great way to help develop a sense of what makes up a usable website

Task: *Conduct a heuristic evaluation…*

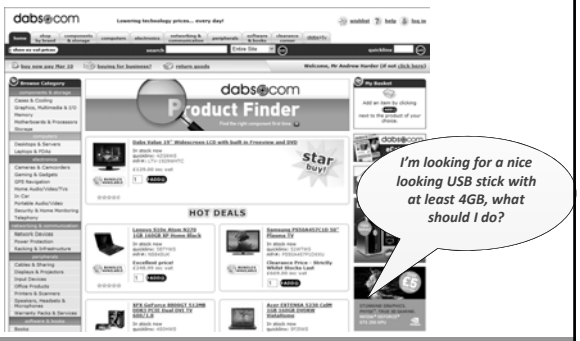
- Conduct a heuristic evaluation of the TfL Journey Planner: http://www.tfl.gov.uk/journeyplanner
- We have the user journey for a cycle trip from Birkbeck to St John's Park on paper prototypes
- Use Nielsen's heuristic evaluation and make notes in these headings
  - **Website feature:** What part of the site is of interest?
  - **User implication:** What is the likely impact on users? Confusion, etc
  - **Priority:** How important is the issue
  - **Recommendation:** What should be done about the problem?
- Remember to include good as well as bad points

2.3.6 Cognitive Walkthrough

What is a cognitive walkthrough?

- A cognitive walkthrough is a complementary analytical technique that focuses on how easy a site is to learn
- This is a good exercise to ensure your site has a good information scent and that core tasks (like purchase) are well-supported
- Cognitive walkthroughs focus on three key questions

Will the user understand what their next action has to be to complete their task?



Will the user see how to take their next action?

Will the user understand that they have successfully completed, or failed to complete, the right action?

- Now, what does this mean?

Applying cognitive walkthroughs

- As another analytical method, you use the same approach as heuristics:
- Get a group of designers or researchers together with a prototype of your site and let them loose
- You then get their feedback and agree a list of common usability problems they've identified

Strengths & weaknesses

- Like the heuristic evaluation, a cognitive walkthrough is **relatively quick and cheap**
- It complements heuristic evaluation by **focussing on the users journey** through the website to complete key tasks
- This means that key features like buying will be surfaced
- Because it focuses on learnability, it **won't help you cater to the needs of expert users,** or help identify broader non-transactional objectives like building brand identity

Task: *Conduct a cognitive walkthrough…*

- Do you own cognitive walkthrough of the paper prototypes of http://www.dabs.com
- Use the three key questions and make notes on the same headings
  - **Website feature:** What part of the site is of interest?
  - **User implication:** What is the likely impact on users? Confusion, etc
  - **Priority:** How important is the issue
  - **Recommendation:** What should be done about the problem?

2.3.7 Usability tests

What do we mean by usability test?

- A usability test is a one-on-one session where a representative user interacts with a prototype design with a researcher facilitating and taking notes
- Information you can get out includes:
  - Whether the **proposition is clear and of real value** to the user
  - Whether there are **usability issues that inhibit successful** use of the website
  - Whether key tasks can be quickly and readily completed by users
- A usability test can be **qualitative**, through open-ended interview questions, or **quantitative** by measuring task success and time rate

Quantitative testing

- A quantitative test can help inform the final stages of design by **verifying the performance of the site** along the key measures
  - **Task completion rate and time**
  - **Satisfaction rating**
- The researcher sets a few **standards tasks, times the participant and writes a survey to capture results** at the end
- When it identifies small problems, quant testing can identify where tweaks need to be made to the design
- But when it identifies bigger problems, quant testing typically doesn't provide enough guidance for a redesign

Qualitative testing

- Run **more like an open-ended interview,** qualitative testing lets the participants explore the prototype, exploring their own motivations & interests as well as your test objectives
- Qual testing is quite strong at **discovering a more holistic understanding of your user's mental model, perceptions** and **motivations**
- But you need to **be careful with interpreting** what your users say
- And it is often **hard to get an overall picture** of how well the current design performs

How to do a usability test

- Mix quantitative and qualitative objectives to suit your evaluation objectives
  - Regardless of what you want to learn and where you are in the design process, it is almost always useful to include both qual and quant methods
- Set up the usability test
  - Users
  - Client observations
  - Write an interview script/ discussion guide
  - Write a brief survey for your quantitative objectives

Users – who and how many?

- Should be as **representative** as possible
- For an intranet, it's easy to find appropriate users!
- For an Internet site, need to have a **sample of users with similar demographic distribution** to the intended user population
- Normally you'll get those from the **specialist market research recruiter** your usability consultants work with
- Jakob says you only need to **test with 5 users,** but not everyone agrees!
- A normal test is conducted with 5-10 users doing the same things

Observing sessions

It's important that stakeholders turn up to observe!

- It help them understand that **users may see their product with different eyes**
- It creates a **common reference point** and shared experience across the team
- Lots of observers **see more** than just one (and help with note taking)
- It's great fun! (or rather depressing sometimes!)

Warning: Avoid observers in the same room, it's intimidating!

Basic tips for interviewing users

- **Demographic questions** – what kind of person are you?
- **Task questions** – how would you achieve this? What are you doing? Why? Is that what you expected to happen?

  DON'T: ask questions that could get a yes/no answer
  DON'T: ask leading questions ("You like this, don't you?")
  DO: deviate from the script
  DO: tell them you didn't make the prototype. (Impartial**)**

- **Remember: comprehension, anticipation, satisfaction, task success**

Think aloud

- A useful technique for qualitative interviews is to ask users to "think aloud"
- Get immediate feedback on what users are **doing,** where they **looking,** what they are **reading,** what they are **understanding**
- Some people will find this hard to do, but keep encouraging them to keep talking.
- There are two magic phrases: "uh-huh?" and "why is that?"
- While they are thinking aloud, users will be **paying more attention** to what they are doing, reducing mistakes
- Unsuitable for measuring task time at same time

Retrospective protocol

- A different option to think-aloud is to ask users to proceed through their tasks first, then explain what their experience was like afterwards
- This means you can still time tasks accurately
- But users will still often **post-rationalise** what they did and explain away problems that they had

Measuring performance

In usability studies you can measure many things, though the 3 fundamental things to measure are:

System efficiency
…for example time to complete task, loading time
System effectiveness
…for example task completion, number of errors
User satisfaction
…for example preferences, uptake etc

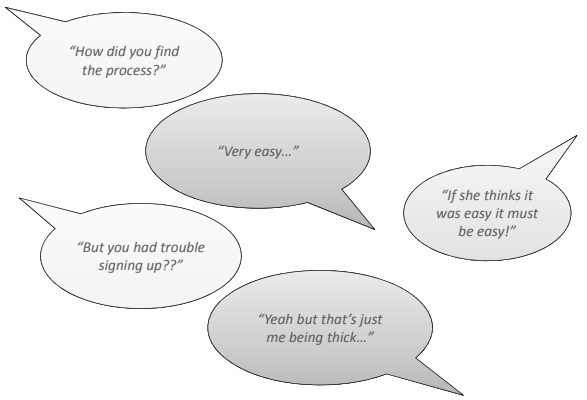
Other aspects you can think of?

When to ignore what users say…

The most trustworthy of user feedback is their behavior during tasks

Beware when asking for their opinion
- Humans **aren't good at introspection**
- It's an awkward situation: **they will say whatever they think you expect** them to
- Often they'll **blame it on themselves**
- **They aren't designers:** they don't realise the impact of their suggestions

This means
- **Avoid what-if** questions. They are not effective.
- **Always interpret** what users say carefully.



Exercise

- Choose one of the phones in the session
- Set some evaluation goals
- Set your interview script to last for about 5 minutes
  - Introduction
  - Explore current user attitudes & behaviours
  - Complete some tasks (from user or yourself)
  - Wrap-up questions
- Get into pairs and participate in each other's usability test
- Report back!

Analysing and documenting findings

- **If an issue happens to only one of the six users, is it important?**
  …It's your call
- **What was the impact?**
  Catastrophic or just an annoyance?
- **How persistent was the problem?**
  Was it a one off or would it occur all the time?
- **Problem severity is a judgment call based on your expertise in user behaviour & usability theory**

- A **spreadsheet** or a **PowerPoint** showing findings and severity rating is the most common deliverable

2.3.8 Eyetracking & A-B testing

Eyetracking

Eye-tracking records a reflection of invisible infra-red light off the cornea to **show where people are looking** on a screen.

The software records:

- The spots where people look (**fixations**)
- The eye movements (**scan path**)
- The **length of time** people look at a specific area of interest (fixation duration)
- The **mouse clicks**
- The **pages that they are looking** at

Example: *An eye tracking recording*

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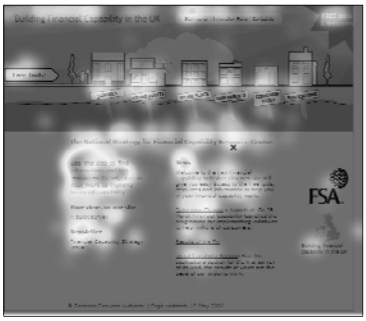
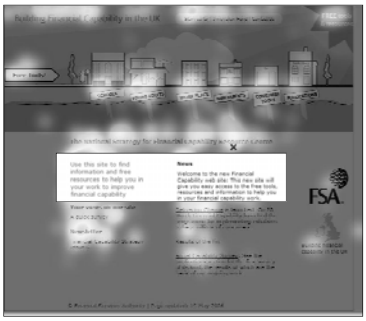


Discuss: *What does this tell you?*

Example: *An eye tracking recording*



Eyetracking

Downsides:

- Eye-tracking requires **expensive equipment, trained operators** and involves **additional set up** (at least ½ a day extra) and analysis time (at least one day extra)
- It only tells you **where users look,** but **not what the see,** why they are looking there and how they feel

Eyetracking needs to be **done in combination with in-depth interviews** and proper user testing.

What is A-B testing?

- A-B testing is where two versions of a website are created that differ by one controlled variable
- These sites are then shown to alternative users, and the results are analysed to see which version has better performance
- This is supported through online analytic tools like Google Website Optimiser

Case study: *BarackObama.com*

From Harry Brignull's blog

…beyond launch

The beauty of the web is that it's easy to adjust things after launch
Use web metrics to **measure uptake** post launch

Things you can find out:

- What users click on
- Their way through the site
- Where they come from
- Drop-out rates
- Entry and exit points

- More information here: **14 free tools that reveal why people abandon your website**

Summary

Today we talked about:

- The psychological basis of usability problems and behaviour on the web:
  - Sensation, perception and gestalt
  - Memory and attention
  - Implications for design
  - User behaviour on the web
- **Usability evaluation methods**
  - How to set goals for your evaluation
  - Analytical methods: heuristics and cognitive walkthroughs
  - User methods: qualitative and quantitative usability tests
  - Eye-tracking and A-B testing

Your project…