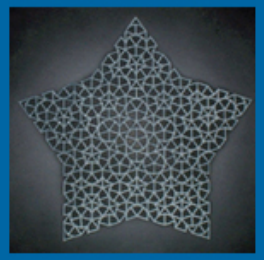
Reading outside the course

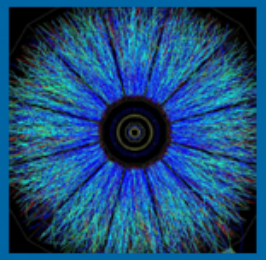
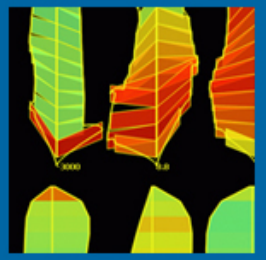
Where can you go to find those extra resources I said you need to use to get firsts in your coursework:

- IDEO (The Field Guide to Human Centred Design in particular is excellent and free to download)
- (On Youtube) The UX Mastery Series
- The Nielsen Group
- Sketching UX by Bill Buxton
- The ACM SIGCHI Conference

CSC349 User Experience

Usability Studies

Lecture Overview

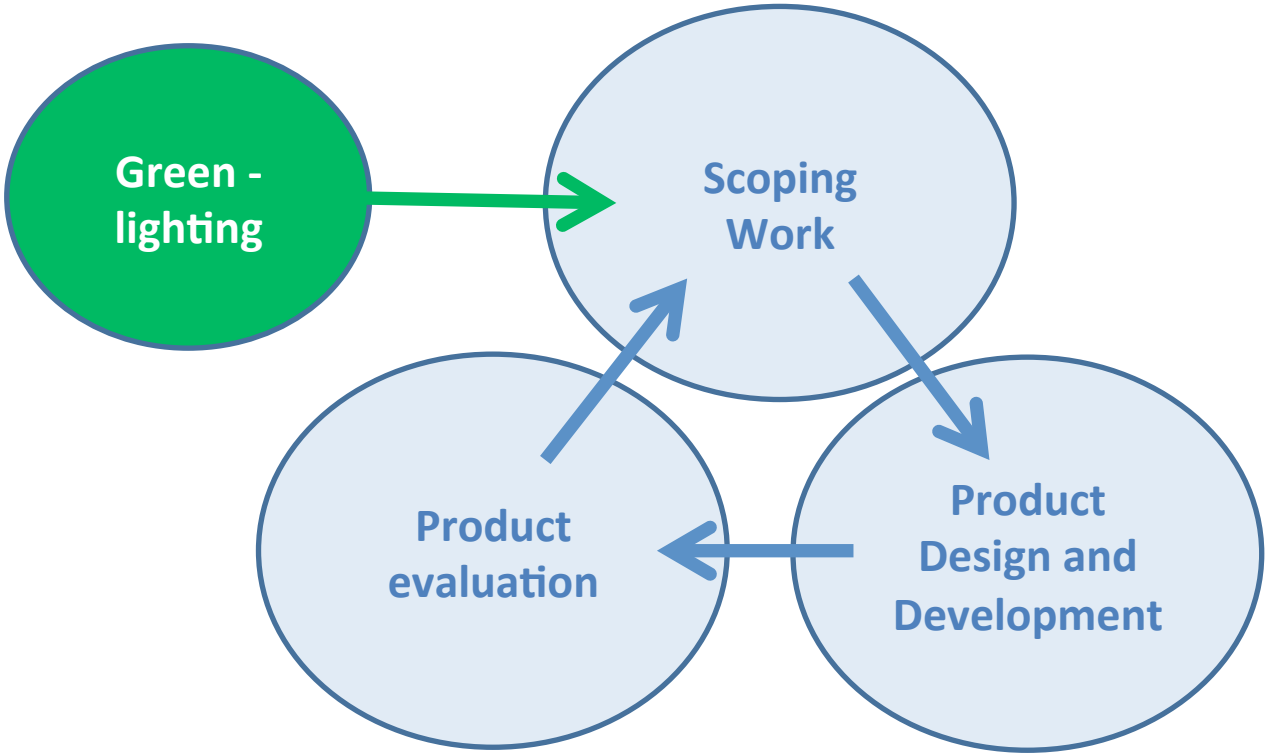
We will review the basics of Usability studies – their purpose and their relationship with UX

We'll look at a simple set of Usability Heuristics and try to understand the term

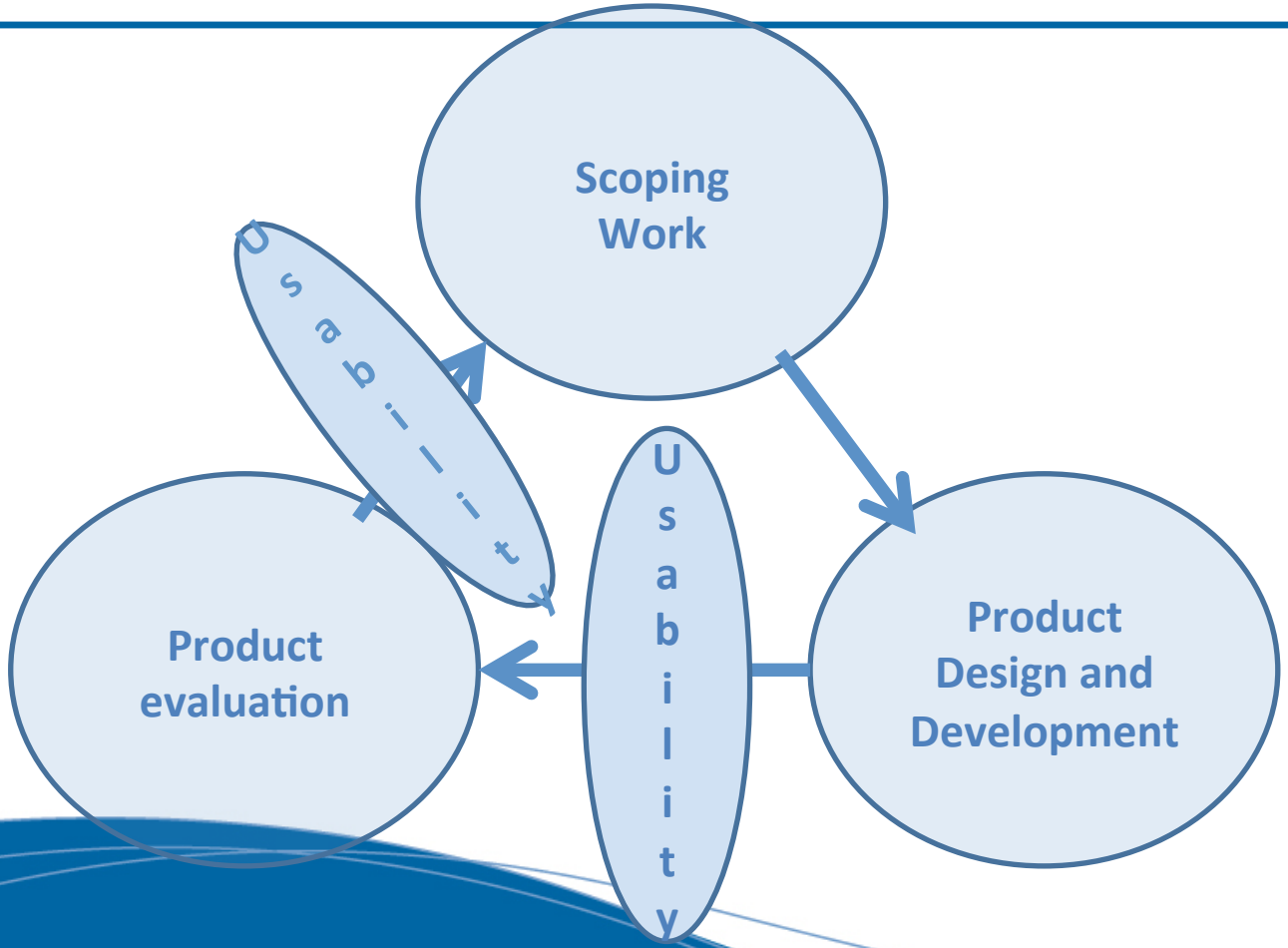
We'll then take a look at the ways that we can study the Usability of a design

We'll try to leave some time at the end of the lecture to answer questions about the coursework

Reminder - Design stages



Reminder - Design stages



What is the role of Usability in UX?

How would you describe the relationship?

Does one encompass the other?

Usability has it’s limitations

Usability != UX (automatically)

Sometimes you want to make things hard to do

- Video games
- Skill driven activities like music composition or Photoshop
- Important instructions that commit irreversible actions

A simple example – keyboard shortcuts are almost always an example of bad usability by most classic measures

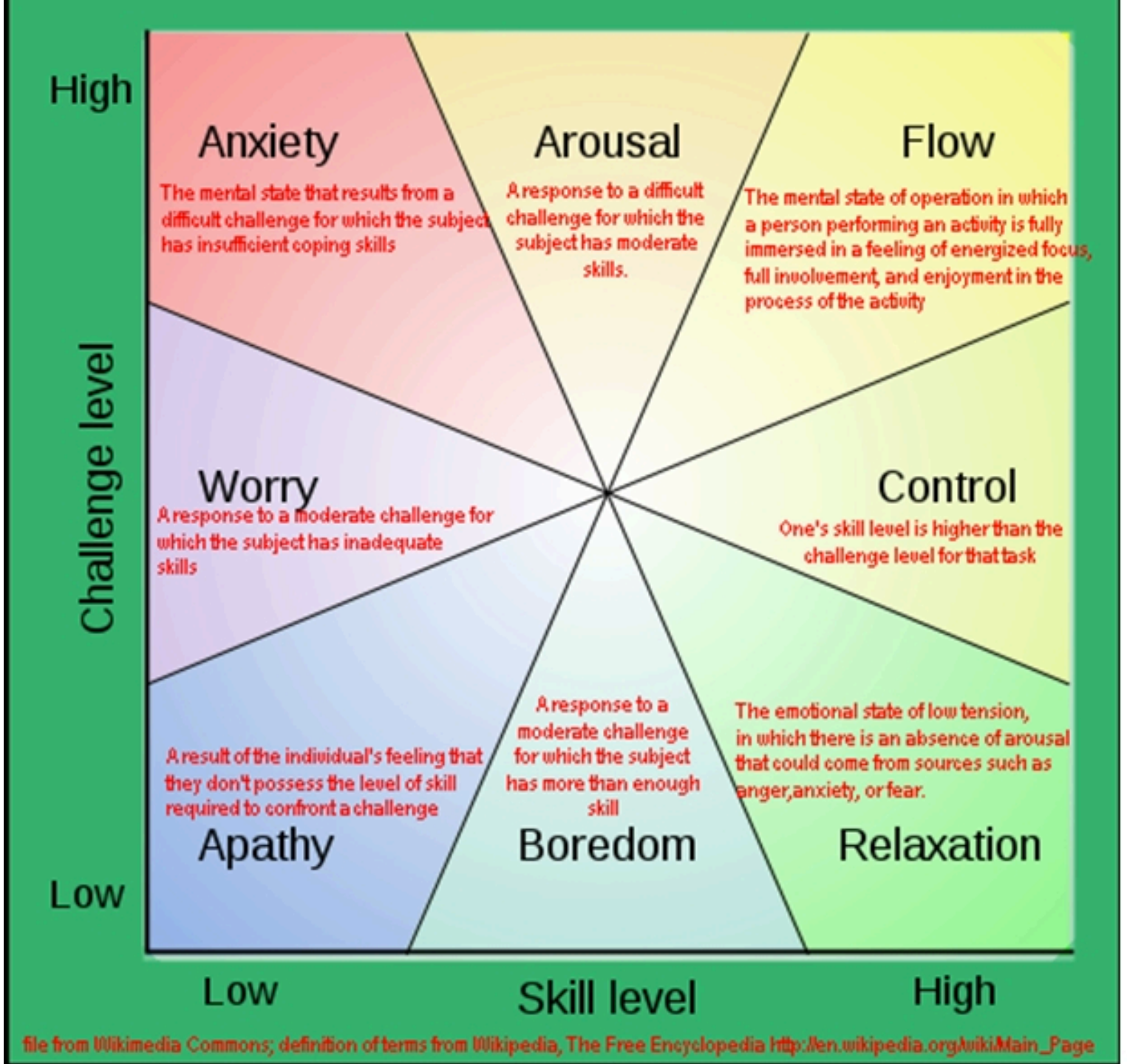
Usability in UX

What is the role of usability engineering in UX?

- Usability can improve the experience, it's rare that you want your interface to be hard to use but not impossible
- Usability can be vital in delivering the experience, if you can't use the device at all you can't experience it

Usability can also *be* the experience

- Think particularly elegant solutions to certain problems
- Think of the satisfaction that comes from effective work – a keyboard that feels just right, a spreadsheet tool right where you need it to be, an auto-correct system that works just right



Gauging Usability: Metrics vs Heuristics

Usability Metrics are concrete measures of a specific phenomenon – they are rigorous, specific, comparable, and can be hard to generalise

Usability Heuristics are looser guidelines that speak to an overall view of the "usability" of a device – they are broad, qualitative, and generalisable

- Heuristics come in groups to encapsulate the ideas of usability and must be kept in their groups
- The significance of a specific set of heuristics is... debatable?

The 8 Golden Rules, Dix's 21 principles, LEMERs… they have strenghts and weaknesses but what really matters is you pick one and work with it

Applying Heuristics

How do we make use these heuristics and metrics when designing a new system? What stage are they useful in?

Familiarity with the different aspects matters when *greenlighing*

- Some elegant ideas are fundamentally not usable
  - See the field of basically all motion control ever for a concept undermined by poor usability

Familiarity with the principles when *designing* the system (product design and development) and mental evaluation is valuable in of itself as well as it guides your work

But most of the time, usability *evaluation* is applied to a high fidelity prototype or real-world system

Relative merit of different heuristics

Heuristics are applied and the significance of each individual heuristic varies depending on system design and context of use

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Imagine that you are evaluating a system that let's administrators enter the results of school children's grades into it. They have to enter hundreds of children's data into the system each week quickly.

Imagine you are evaluating the same system but now an interface that would let students enter their grades.

Which of the heuristics is relatively more important in which use cases?

Heuristic Collection - LEMERS

Learnability – how easily can you discover the features of the interface?

Efficiency – how long does it take to perform basic tasks?

Memorability – how easily can you remember where to find the different functions of a device?

ERor recovery – how many mistakes does the interface cause and after making a mistake, how easily can you catch and correct it?

Satisfaction – how pleasant is the design to use?

Usability Inspection Techniques

So far we have described what Usability *is* but how can you measure or evaluate it?

- **Heuristic Evaluation**–Think about your specific system in relation to the Heuristics you have devised and the tasks users will undertake
- **Cognitive walkthroughs** – in which a range of design experts move through a system pretending to be users and give their evaluation of the system as it pertains to specific tasks
- **Think-aloud protocols –** in which the users of a system work through a prototype of the system (digital or paper) and talk about their thoughts at each stage of the process

Mental Models in Evaluation

A key concept in Usability is the **mental model** – the way that your user believes the system is working or the real world analogue of how the system works – Usability Evaluation seeks out user's models

- A good mental models leverages existing understanding, allows accurate prediction and allows discovery

Mistakes and problems when using a system stem from weak or incorrect mental models

- A bad example: Think about the clipboard metaphor in copy-pasting and how weak it is – if you copy items to your clipboard in real life, they don't override each other
- A good example: Look at the paint tools in paint.net and see how closely they align with real world painting

Cognitive Walkthrough

Cognitive walkthroughs – in which a range of design experts move through a system pretending to be users and give their evaluation of the system

Strengths

- Trained/experienced designers can project themselves into future use cases
- Feedback is couched in the language of design and usually very clear

Weaknesses

- Lack of expertise in context of use
- Significantly different mental model if you are a part of a design team

Think-Aloud Protocols

Think-aloud protocols – in which the users of a system work through a prototype of the system (digital or paper) and talk about their thoughts at each stage of the process

Strengths

- Real world perspective on your design
- None of the biases that typically come with designers

Weaknesses

- Think-aloud is difficult to implement – people will lapse into silence when concentrating!
- Not a creative process: See Ford and carriages quote

Lecture Summary

Usability concepts pervade the design process

Heuristics are to be familiarised with but the sets are important because of encapsulation – don't confuse them!

Cognitive walkthroughs leverage experts skills to evaluate a system

Think-aloud protocols let you gain an insight into the users perspective but are harder to apply

A/B testing is also usability testing but falls firmly in the realm of evaluation