Introduction to Cognition
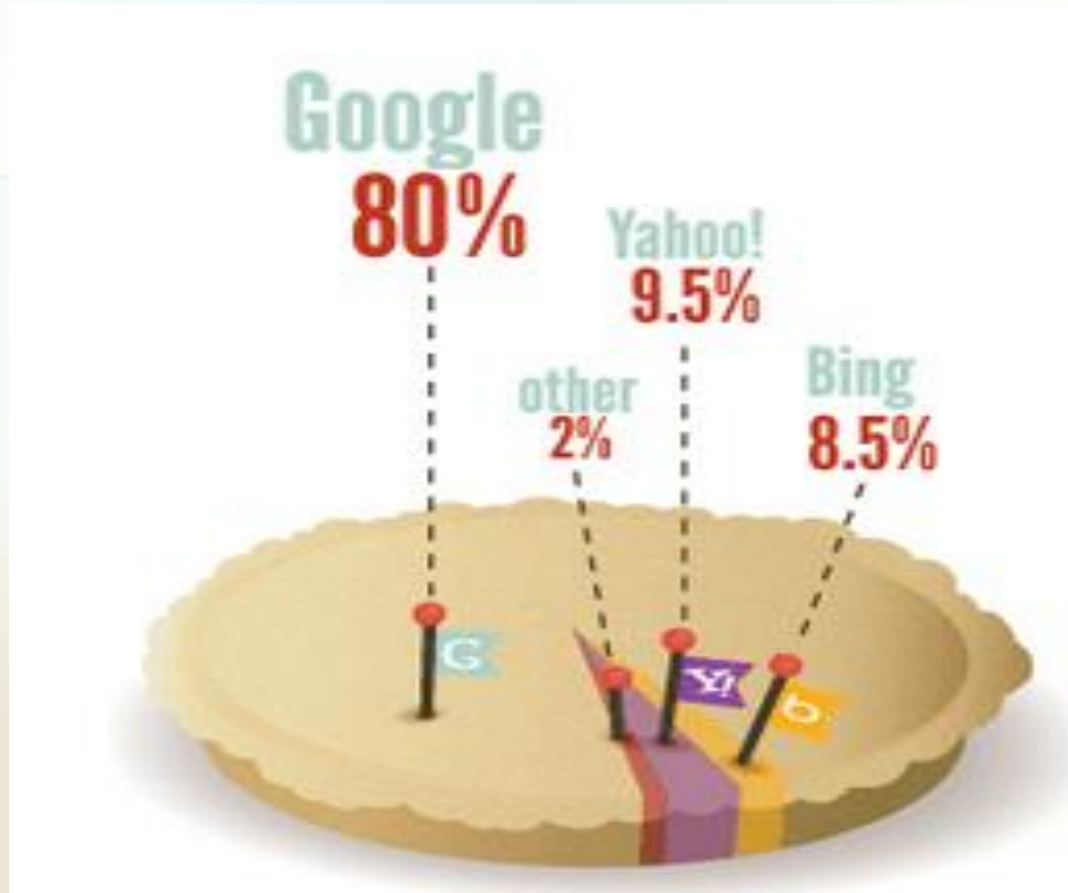
Overview

- Search Engine Optimisation (SEO)

- Introduction to cognition

Search Engine Optimisation (SEO)

SEO is a marketing discipline focused on growing visibility in search engine results. SEO encompasses both the technical and creative elements required to improve rankings, drive traffic, and increase awareness in search engines.
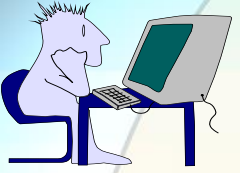
https://moz.com/beginners-guide-to-seo

Search Engine Optimisation (SEO)

https://moz.com/search-ranking-factors/survey

SEO

Site-maps
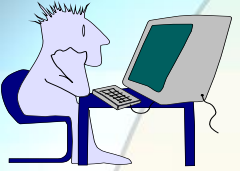Usability
Title-tags
Code-compression
Images Keywords
Site-speeds HTML-Validation
Broken-link-checking Navigation
Meta-tags Page-content
Robots.txt

Human Considerations

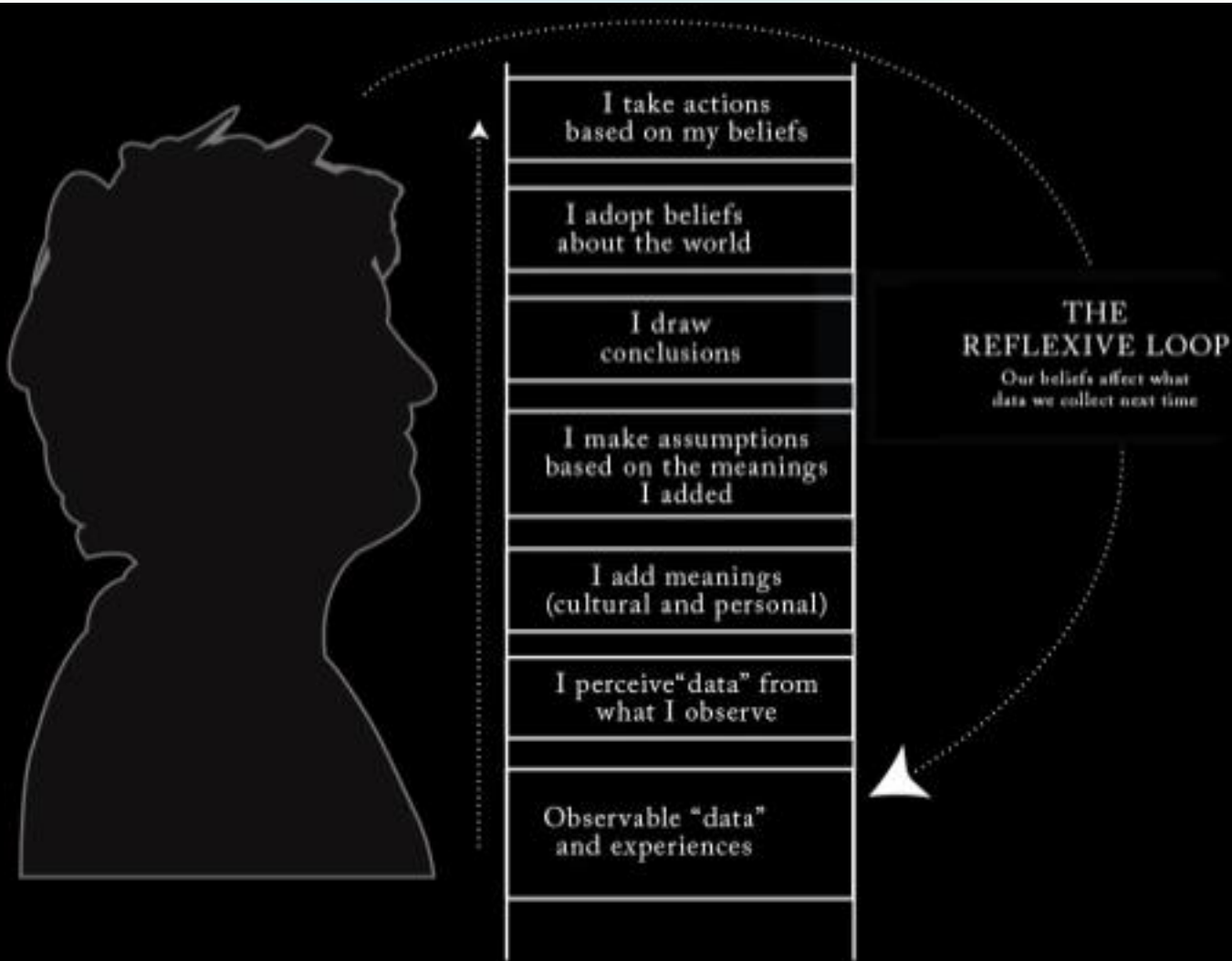•*Cognition* is what goes on in our heads when we carry out everyday activities

Cognitive Frameworks

- **Cognitive frameworks** help us to understand how users become familiar with a system
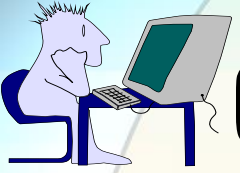
- 2 common frameworks are:
  - Mental Models
  - Metaphors
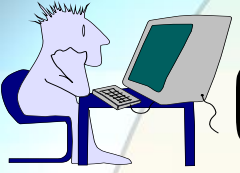
Cognitive Frameworks - Mental Models

MENTAL MODELS

Cognitive Frameworks - Mental Models

- Users develop an understanding of a system through learning & using it

- People make inferences using **mental models** of how to carry out tasks

Human Considerations

Cognitive Frameworks - Mental Models

- A mental model is based on <u>belief</u> not facts.

- Individual users each have their <u>own</u> mental models.

- Mental models are in <u>flux</u>.

Cognitive Frameworks - Mental Models

- **Mental models** can be described as "internal constructions of some aspect of the external world enabling predictions to be made"

- **People sometimes uses erroneous mental models**
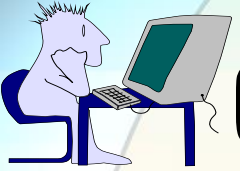
Cognitive Frameworks - Mental Models

Example:

You arrive home on a cold winter's night to a cold house. How do you get the house to warm up as quickly as possible?

➡ **Set the thermostat to be at its highest ?**

➡ **Set the thermostat to the desired temperature?**

- **Typically, people select to set the heat to its highest setting to "get it to heat up as fast as possible"**

- **However, the thermostat will not heat any faster at a higher setting - erroneous mental model**
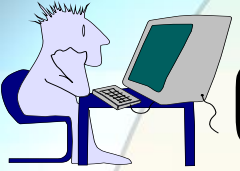
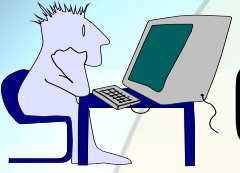# Cognitive Frameworks - Mental Models

Other Incorrect Mental Models:

•Pressing the button at pedestrian lights – more presses, lights will change faster..

•Cursor freezes on the computer – press various different types of keys…

•Hit the TV to make it work..
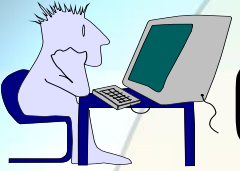
Cognitive Frameworks - Mental Models

Mixed up mental models in IT systems:

- Operating System windows vs. browser windows

- A window vs. and application

- Icons vs. application

- Browse commands vs. native commands in a web-based app

- Local vs. remote info

- Different passwords and log-in options
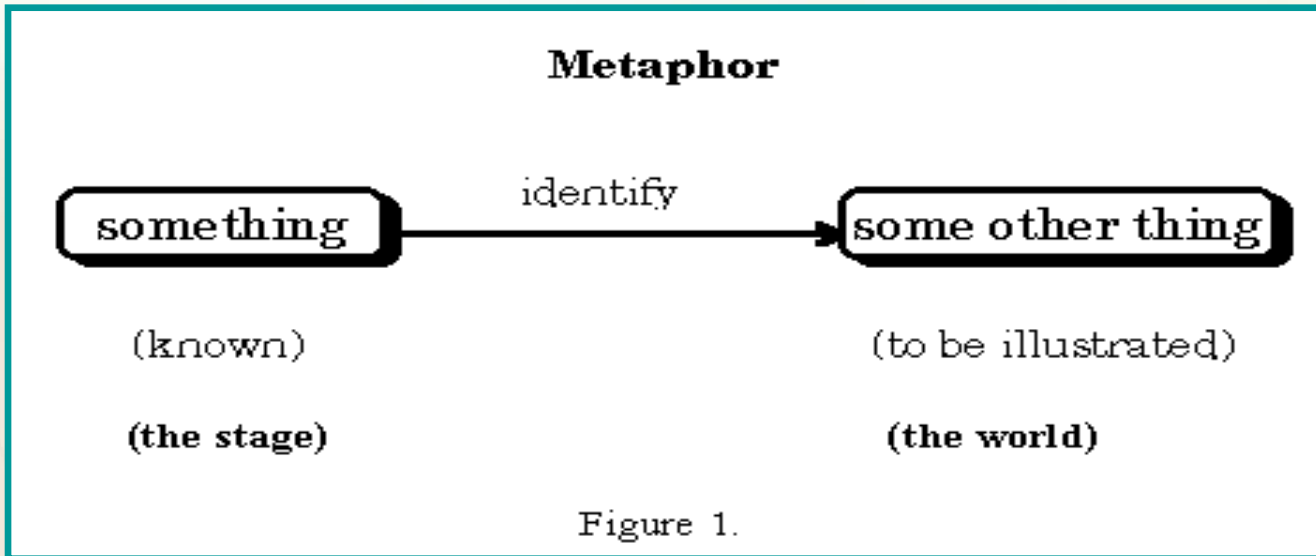
Cognitive Frameworks - Mental Models

What is your mental model of how you buy an item from an ecommerce website works?

What is your mental model of how a hotel website works?
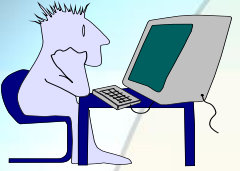
Cognitive Frameworks - Metaphors

• **Metaphor** is a figure of speech in which an expression is used to refer to something that it does not literally denote in order to suggest a similarity

Figure 1.
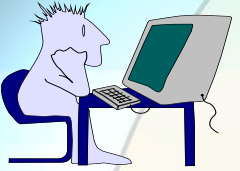
Cognitive Frameworks - Metaphors

- Most prevalent metaphor – "the mind is an information processor"

- Information enters and exits the mind through a series of processing steps

Exercise 1:

Look at your mobile phone:

- **What are the underlying metaphors, if any?**

- **Are there any other obvious metaphors?**

- **Where are some of the points the metaphors fail?**

- **Did the metaphors help you discover how the program works? Did they help you remember the functions of the controls?**

Cognitive Frameworks - Metaphors

Metaphors are implemented using:

Skeuomorphism:

•Refers to a design principle in which design cues are taken from the physical world.

•This term is most frequently applied to user interfaces (UIs), where much of the design has traditionally aimed to recall the real world - such as the use of folder and files images for computer filing systems, or a letter symbol for email - probably to make computers feel more familiar to users.
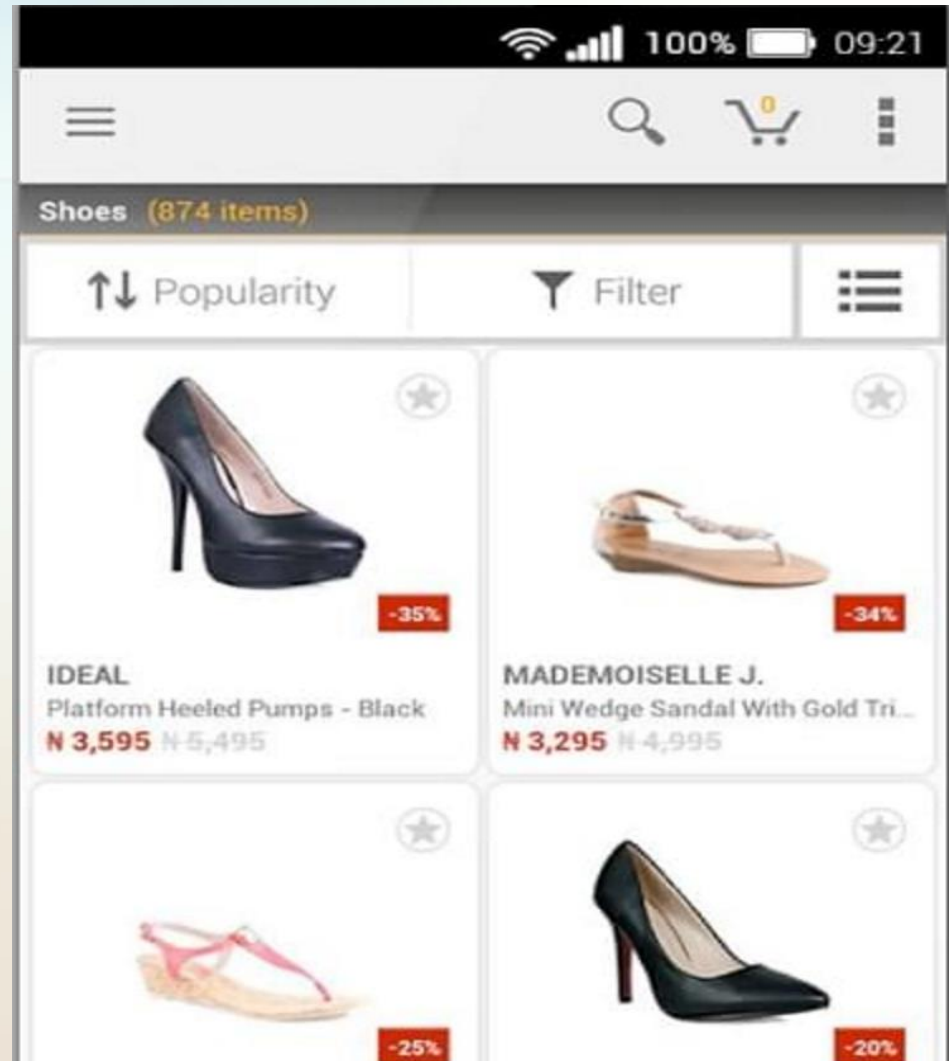
Cognitive Frameworks - Metaphors

Cognitive Frameworks - Metaphors

The hamburger icon

Cognitive Frameworks - Metaphors

When using icons, remember:

- Confidence in interface leads to further use.

- Keep it simple.

- Test the icons for recognisability.

- Use the 5-second rule for icons. If it takes you longer than 5 seconds to think of the image, it probably isn't the best way to communicate that idea/action.

- Give control to your users.

- Build consistency for a better experience and branding awareness.

- Don't forget that you are designing an interface for your users, not yourself.

Cognitive Processes

What goes on in the mind?

**perceiving..
thinking..
remembering..
learning..**

**understanding others
talking with others
manipulating others**

**planning a meal
imagining a trip
painting
writing
composing**

**making decisions
solving problems
daydreaming...**

Cognitive Processes

•**Variety of cognitive attributes have an important influence on screen design**

Human Processes

Perception	Attention	Memory	Learning

Terms of Reference

- **Preece, J. et al. (2002)** *Interaction Design*
- **Shneiderman, B. & Plaisant, C. (2005)** *Designing the User Interface*
- **Benyon, D. et al (2005)** *Designing Interactive Systems*
- **Wyeth, P. & Purchase, H. (2003)** *Using Developmental Theories to Inform the Design of Technology for Children*
- **Hawthorn, D. (2003)** *How Universal is Good Design for Older Users*
- **Nielsen, J. (1995)** *Advances in Human-Computer Interaction*
- *http://www.slideshare.net/willevans/good-design-is-honest-the-cognitive-science-of-user-experience-design*