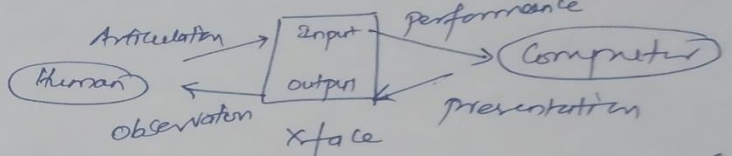
* Word Processor — Save / delete options → file level operations — adjacent in menu — mouse based access → Inadvertent delete instead of save
  ↳ Conf. based delete — But also for save difficult
* VCR — Recording a television programme
* Car radio designers — Tune radio features diverts attention from road
* Mac OS — Task Bar (dock) — rt side — fast launch pad for apps) Trash can
  Dock icons constantly move — accidental errors
  ↳ Trash can keeps rising — copy / paste into Trash folder
  ↳ Designs don't get better
  ↳ users get better

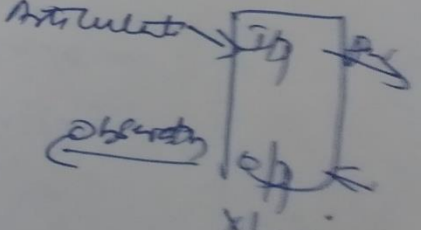
S/w → No longer pretty x faces
↳ suited for task
↳ easy to use
↳ feedback on performance
↳ display info in a format / pace adapted to the user
↳ Confirm to S/w Ergonomics

HCI → Design, Evaluation, Implementation of interactive computing systems for human use and with major phenomena surrounding them.



* Human Factors, Man M/c Interface & alt names
  - Human — Single user / Groups / seq. of users
  - Computer → Standalone / Workstn / Website / Em. System
  - Xn → Comm btw users — Comps.
* Characteristics of a usable xface
  - Useful → Accomplishes Task
  - Usable → ease of use / scope of errors
  - Used → more people should accept
* Norman's Model — Establish a Goal
  Action cycle — Execute action
  Evaluate action.

EG → Form: plan → Trans Actns seq →



Evaluate ← Interpret state

Fitts' law → target hit time → fn of target size (4)
+ distance to be moved
↳ simulation diff sized circles
| diff sizes | 30 of dist | time | dia }.

Memory ← iconic (visual) — persistence of ...
echoic (aural) — repeat question
haptic (touch).

Sensory → short term (working).

35 × 6 → (35 × 2) (×3) = 2100.

* limited → 7±2 digits remember
(digit span) *Menus? UNIX commands

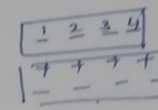
7±2 chunks.

↳ formation of a chunk → closure
ATM Example

closure →

Xface for Automatic Signage.

Cal style | fixed digits



→

Human

✓ I/p - o/p channels → Visual / Auditory / Haptic / Movement.

✓ Memory — short term / long term / sensory
(Info. stored) (working)

Sensory organs / Cap → sight / hear / touch / smell / taste
Key in HCI

↳ Keen o/p → sight / vision

↳ Error → Beep feedback

↳ Read Ability $\propto \frac{1}{\text{Distance from focus point}}$

Bottom to be noticed - flashing messages - edges
detect movement (rods sensitive to outer parts)

Visual processing → A | B | C } Context make things clear

↳ Capitals difficult to read

↳ Ecommerce failure for textile / jewelry industry.

— Sense of feeling lost → Haptic

— future research.

Usability Case Studies – Nielsen Norman Group Articles

Stop Password Masking

- Usability suffers when users type in passwords and the only feedback they get is a row of bullets. Typically, masking passwords doesn't even increase security, but does cost business!!
- **Feedback** and visualizing the system's status most important usability measures
- **undifferentiated bullets** - complex codes does not comply on the earlier principle!
- Most websites (and many other applications) mask passwords as users type them
- nobody looking over your shoulder when you log in to a website. [earlier years internet café curse!]
- suffering reduced usability to protect against a non-issue

- ✓ **Abandon Legacy Design -** Nasty usability problem in testing of mobile devices
- ✓ typing is difficult and typos are common
- ✓ **make more errors** when they can't see what they're typing while filling in a form, **- feel less confident**
- ✓ (a) employ **overly simple passwords** and/or (b) **copy-paste passwords** from a file on their computer. Both behaviors lead to a true **loss of security**.
- ✓ checkbox to have their passwords masked
- ✓ **there only because it's always been there**
- ✓ understanding your products and offers instead of struggling with the user interface.
- ✓ tension between security and usability, sometimes security wins.

Horizontal Attention Leans Left

- ✓Web users spend 69% of their time viewing the left half of the page and 30% viewing the right half
- ✓**more than twice as much time looking at the left side** of the page as they did the right:
- ✓**Viewing Time** : **69%** on left half of screen ; **Right** half **30%**
- ✓Keep navigation all the way to the left. - current options
- ✓Keep the **main content** a bit further in from the left.
- ✓**most important** stuff should be showcased between one-third and halfway across the page.
- ✓**Priority content** should be front and center,

✓Web users spend 69% of their time viewing the left half of the page and 30% viewing the right half

✓**more than twice as much time looking at the left side** of the page as they did the right:

✓**Viewing Time**

✓**69%** on left half of screen ; **Right** half **30%**

✓Keep navigation all the way to the left. - current options

✓Keep the **main content** a bit further in from the left.

✓Left aligned Text v/s Right Aligned Text (Amounts Fine!)

✓The Newspaper industry still thrives WHY

- ✓ **most important** stuff should be showcased between one-third and halfway across the page.
- ✓ users **focus their attention the most on left**.
- ✓ Keep **secondary content** to the right
- ✓ Layouts and viewing patterns are **codependent**
- ✓ Utilize conventional **top navigation** or **left navigation**
- ✓ Web users spend 80% of their time viewing the left half of the page and 20% viewing the right half.
- ✓ Adhering to design conventions will help maximize users' efficiency and company profits
- ✓ 81% fixations fall in the left half of this region on SERPs vs. 80% on general-web pages.