HUMAN-COMPUTER INTERACTION THIRD EDITION

DIX FINLAY ABOWD BEALE

chapter 3

the interaction

extract for MSc/MRes AISD

value and experience

Experience, engagement and fun

designing experience
physical engagement
managing value

Experience?

- home, entertainment, shopping
  - not enough that people can use a system
  - they must want to use it!
- psychology of experience
  - flow (Csikszentimihalyi)
  - balance between anxiety and boredom
- education
  - zone of proximal development
  - things you can just do with help
- wider ...
  - literary analysis, film studies, drama

Designing experience

- real crackers
  - cheap and cheerful!
  - bad joke, plastic toy, paper hat
  - pull and bang

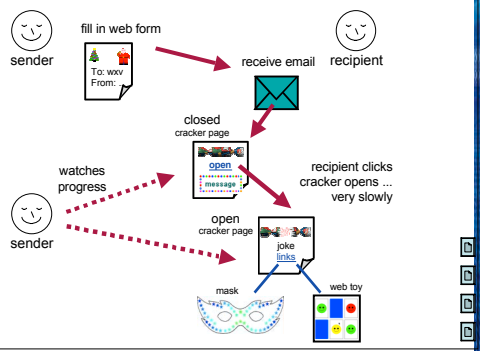
Designing experience

- virtual crackers
  - cheap and cheerful
  - bad joke, web toy, cut-out mask
  - click and bang

Designing experience

- virtual crackers
  - cheap and cheerful
  - bad joke, web toy, cut-out mask
  - click and bang

how crackers work



The crackers experience

	real cracker	virtual cracker
Surface elements		
design	cheap and cheerful	simple page/graphics
play	plastic toy and joke	web toy and joke
dressing up	paper hat	mask to cut out
Experienced effects		
shared	offered to another	sent by email message
co-experience	pulled together	sender can't see content until opened by recipient
excitement	cultural connotations	recruited expectation
hiddenness	contents inside	first page - no contents
suspense	pulling cracker	slow ... page change
surprise	bang (when it works)	WAV file (when it works)

Physical design

- many constraints:
  - ergonomic – minimum button size
  - physical – high-voltage switches are big
  - legal and safety – high cooker controls
  - context and environment – easy to clean
  - aesthetic – must look good
  - economic – ... and not cost too much!

Design trade-offs

constraints are contradictory ... need trade-offs

within categories:

e.g. safety – cooker controls
front panel – safer for adult
rear panel – safer for child

between categories

e.g. ergonomics vs. physical – MiniDisc remote
ergonomics – controls need to be bigger
physical – no room!
solution – multifunction controls & reduced functionality

Fluidity

- do external physical aspects reflect logical effect?
  - related to affordance (chap 5)

logical state revealed in physical state?
e.g. on/off buttons

inverse actions inverse effects?
e.g. arrow buttons, twist controls

inverse actions

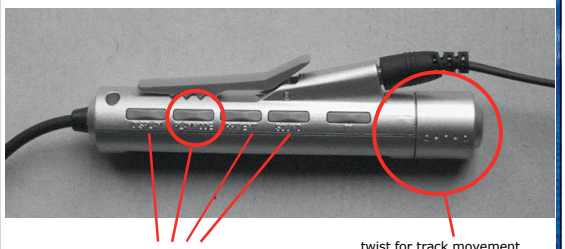
- yes/no buttons
  - well sort of
- 'joystick'
- also left side control

spring back controls

- one-shot buttons
- joystick
- some sliders

good – large selection sets
bad – hidden state

a minidisk controller



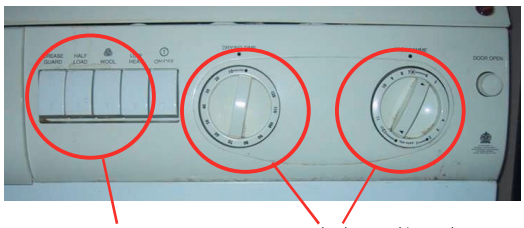
series of spring-back controls
each cycle through some options
–natural inverse back/forward

twist for track movement
pull and twist for volume
– spring back
– natural inverse for twist

physical layout

controls:
logical relationship
~ spatial grouping

compliant interaction



state evident in
mechanical buttons

rotary knobs reveal internal state
and can be controlled by both user
and machine

Managing value

people use something
ONLY IF
it has perceived value
AND
value exceeds cost

BUT NOTE
- exceptions (e.g. habit)
- value **NOT** necessarily personal gain or money

Weighing up value

value
- helps me get my work done
- fun
- good for others

cost
- download time
- money £, $, €
- learning effort

Discounted future

- in economics Net Present Value:
  - discount by $(1+rate)^{years\ to\ wait}$
- in life people heavily discount
  - future value and future cost
  - hence resistance to learning
  - need low barriers
    and high perceived present value

example – HCI book search

- value for people *who have* the book
  helps you to look up things
  - chapter and page number
- value for those *who don't* …
  sort of online mini-encyclopaedia
  - full paragraph of context

… but also says "buy me"!!

Value and organisational design

- coercion
  - tell people what to do!
  - value = keep your job
- enculturation
  - explain corporate values
  - establish support (e.g share options)
- emergence
  - design process so that
    individuals value → organisational value

General lesson …

if you want someone to do something …

- make it easy for them!
- understand their values