

the interface just left the desktop

Alan Dix

Lancaster University, UK

alan@hcibook.com

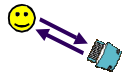
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HCI

human-computer interaction
changes and trends

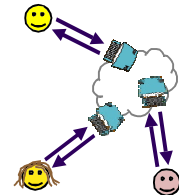
increasing multiplicity

- 1980s - personal computers
 - one man and his machine
 - and they were men!



increasing multiplicity

- 1980s - personal computers
- late 1980's & 1990s - CSCW
 - lots of people
 - geographically remote
 - but ...
 - one person per machine
 - and ...
 - one machine per person

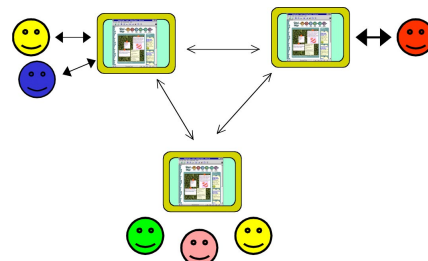


increasing multiplicity

- 1980s - personal computers
- late 1980's & 1990s - CSCW
- family use, global networks, ubiquitous devices

families and friends

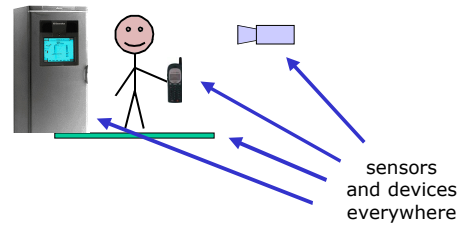
lots of people, together and remote



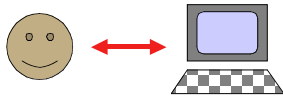
how many ...

- computers in your house?
- computers in your pockets?

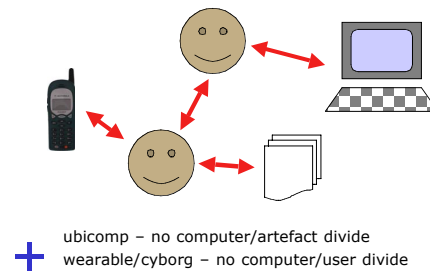
ubiquitous & wearable computing



from - dialogue with the computer



to - dialogue with the environment



work and fun

- traditional HCI methods
 - tasks, goals, work, work, work
 - and the odd game
- now
 - e-shopping, communities, home
 - experience and enjoyment
 - more decision points

... and now

- low intention
 - design in sensor-rich environments
- deconstructing experience
 - design for fun!



low intention and
sensor-based interaction

car courtesy lights

- turn on
 - when doors unlocked/open
- turned off
 - after time period
 - when engine turned on



driver's *purpose* is to get into the car
incidentally the lights come on

Pepys

- Xerox Cambridge (RIP)
- active badges
- automatic diaries



Allan's *purpose* to visit Paul's office
incidentally diary entry created

MediaCup

- cup has sensors
 - heat, movement, pressure
- broadcasts state (IR)
- used for awareness
 - user is moving, drinking, ...



Han's *purpose* to drink coffee
incidentally colleagues are aware

shopping cart

- goods in shopping cart analysed
 - e.g. Amazon books
- used to build knowledge about books
 - people who like X also like Y
- used to give you suggestions
 - "you might like to look at ...", "special offer ..."



my *purpose* to buy a book
incidentally shown related titles

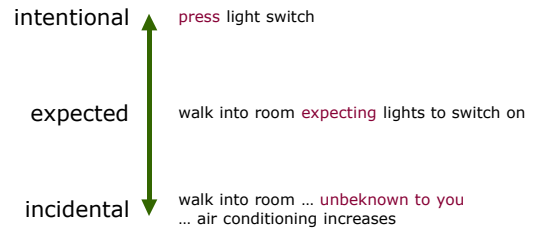
onCue

- 'intelligent' toolbar
 - **appropriate intelligence**
 - make it good when it works
 - don't make it hard if it doesn't
- analyses clipboard contents
- suggests things to do with it

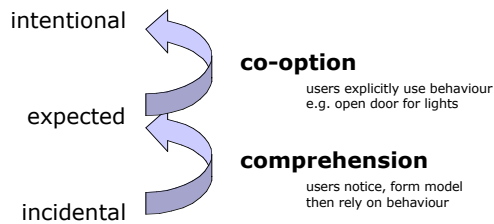


user's *purpose* to copy text elsewhere
incidentally alternative things to do

the intentional spectrum

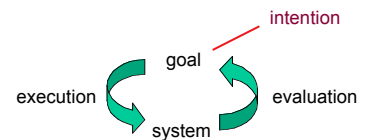


fluidity



interaction models

- intentional cycle
 - Norman execution/evaluation loop
- some exceptions
 - multiple goals, displays, opportunistic
- guidelines
 - feedback, transparency



cognition

- physical things (inanimate)
 - directness of effect
 - locality of effect
 - visibility of state
- computational things (also animate)
 - complex effects
 - non locality of effect
 - distance - networks; time - delays, memory
 - large hidden state

cognition

- understanding
 - innate intelligences
 - physical, natural/animal, social, physiological
 - rational thought
 - imagination
- interfaces
 - GUI, VR, AR, tangible
 - recruit physical/tangible intelligence
 - ubicomp, ambient, incidental
 homunculi, haunted houses

designing incidental interaction

- need richer representations
 - of the world, of devices, of artefacts
 - wider ecological concerns
- two tasks
 - purposeful task - for interpretation
 - supported task - for actions



deconstructing experience

three use words

- useful
 - functional, does things
- usable
 - easy to do things, does the right things
- used
 - pretty, available, acceptable to organisation

changes ...

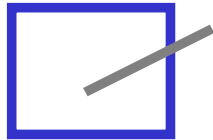
- professional → personal
 - home, family, friends
- enforced → elective
 - personal choice
- product → service
 - continual choice

john ruskin

the cursed animosity of inanimate objects

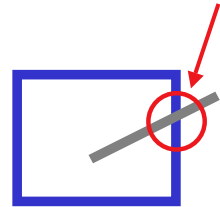
changing media

- original page design



changing media

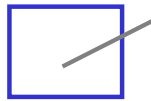
- original page design
- for the web?
 - straight lines OK
 - crossing hard



understand the effect

surface elements

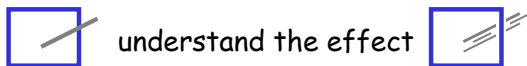
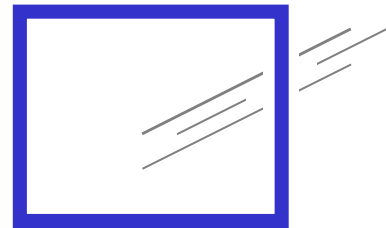
- strong box
- single thick diagonal
- actual crossing



experienced effects

- breaking boundaries
- dynamism by crossing

redesign

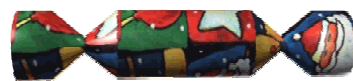


understand the effect

original image	new image
surface elements	
strong box	strong box
single thick diagonal	several thin diagonals
actual crossing	not present
experienced effects	
breaking boundaries	gestalt feel
dynamism by crossing	dynamism multiple lin



designing experience



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

designing experience



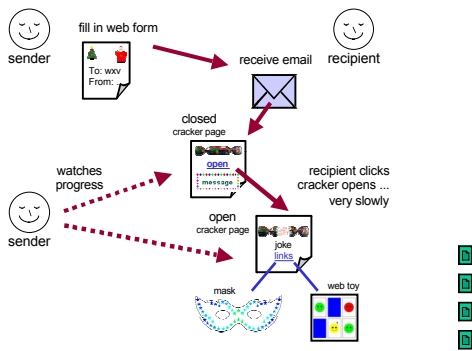
- virtual crackers
 - cheap and cheerful
 - bad joke, web toy, cut-out mask
 - click and bang

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)

designing experience

- don't replicate appearance
- but deconstruct experience
- then reconstruct experience



the lessons ...

- HCI is changing
 - sensor-filled environments, ubicomp
 - changes models of cognition, design, etc.
 - leisure and elective use at work
 - understand and design experience
- but old stuff still important!
 - menus on a phone screen
 - web pages for crackers



what makes an academic discipline?

not the things that change
but the things that don't change

