Usability Engineering & User Experience

Christof van Nimwegen, 12 mei 2017

Chapter 4
SOCIAL INTERACTION

Chapter 5
EMOTIONAL INTERACTION
Excursie Rabobank 19 mei: last reminder!

- Maximaal 40-60 personen (nu: 50)!
- Teken in op http://tinyurl.com/mapcy8h
Chapter 4

Social Interaction

- Being social
- Face to face conversations
- Remote conversations
- Tele-presence
- Co-presence
Enjoy your meal!

be PRESENT WITH YOUR FRIENDS WHO ARE HERE
Drop your phone in the basket

KEEP CALM
AND
PUT YOUR CELL PHONE IN THE BASKET
Being social: issues

- Are F2F conversations being superseded by our social media interactions?
- How many friends do you have on Facebook, LinkedIn, vs real life?
- How much overlap?
- How are the ways we live and interact with one another changing?
- Are the established rules and etiquette still applicable to online and offline?
Sacks et al. (1978) work on conversation analysis describe three basic rules:

**Rule 1:** the current speaker chooses the next speaker by asking an opinion, question, or request

**Rule 2:** another person decides to start speaking

**Rule 3:** the current speaker continues talking
Face-to-face: Conversational mechanisms

Various mechanisms and ‘rules’ are followed when holding a conversation, e.g. mutual greetings

A: Hi there
B: Hi!
C: Hi
A: All right?
C: Good, how’s it going?
A: Fine, how are you?
C: OK
B: So-so. How’s life treating you?

But sometimes it goes wrong ;-):
Face-to-face: Conversational rules

Turn-taking used to coordinate conversation
- A: Shall we meet at 8?
- B: Um, can we meet a bit later?

Adjacent pairs
- A: Shall we meet at 8?
- B: Wow, look at him?
- A: Yes what a funny hairdo!
- B: Um, can we meet a bit later?

- Backchanneling to signal to continue and following
  - non-lexical: Uh-uh, umm, ahh
  - phrasal: Really? I see, Wow, OK
  - backchanneling in online conversations?
Face-to-face: Non-verbal nuances
Face-to-face: More conversational rules

Farewell rituals

- *Bye then, see you, bye, see you later….*

Implicit and explicit cues

- e.g. looking at watch, fidgeting with coat and bags
- explicitly saying “*Oh dear, must go, look at the time, I’m late…*”
Remote conversations: one way (half-duplex)
Remote conversations: two way (full duplex)
Remote conversations: Chatbots

Chatbots Will Be Your New Best Friend

Chatbots with Social Skills Will Convince You to Buy Something

7 Ways That Brands Can Make Chatbot Conversations More Authentic
Remote Conversations: Conversational UI
Remote Conversations: Chatbot back in the day....

ELIZA > (PLEASE TYPE IN ALL CAPS) WHAT’S YOUR NAME DEAR?
AMIT
ELIZA > HI, I’M ELIZA. WHAT DO YOU WANT TO TALK ABOUT?
AMIT > CAN I TALK ABOUT MY PROBLEM?
ELIZA > SURE...!
AMIT > DUE TO ON GOING EXAMS IN COLLEGE, I HAVE A LOT OF STRESS.
ELIZA > PLEASE RELAX A LITTLE. SLEEP WELL.
AMIT > THANKS FOR YOUR ADVICE.
ELIZA > NO MENTION.
AMIT > BYE
ELIZA > BYE AND KEEP IN TOUCH...
Remote conversations: Chatbots, conversational UI

Quickly book travel using voice
Conversations: Conversational UI

Amazon Echo kopen in Nederland en België

Your Google Assistant, always ready to help.
Conversations: Conversational UI

play with it!!!!

api.ai
Remote conversations: Conference call
Remote conversations: Videophone and visualphone
Remote conversations

• Much research on how to support conversations when people are ‘at a distance’ from each other

• Many applications have been developed
  - e.g., email, videoconferencing, videophones, videoconferencing, instant messaging, chatrooms

• Do they mimic or move beyond existing ways of conversing?
Remote conversations: social media conversations

- Do same conversational rules apply?
- Are there more breakdowns?
- How do people repair them for:
  - Phone?
  - email?
  - Instant messaging?
  - texting?
  - Skyping?
Remote conversations: Ehpemeral or anonymous?

Ehpemeral = kortstondig
Remote conversations: Openness in Social media

<table>
<thead>
<tr>
<th>Open</th>
<th>Accept connection</th>
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<tbody>
<tr>
<td>Twitter</td>
<td>Facebook</td>
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<tr>
<td>Yammer</td>
<td>Flickr</td>
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<td>SlideShare</td>
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<td>Wikipedia</td>
<td>Netlog</td>
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Remote conversations: Social-psychological aspects

- Selfperception
- Privacy
- Introversion / extraversion
- Group dynamics
- Reputation
- Group membership
- Popularity
- Shame
- Attention
- Narcism
- Acknowledgement
- …
Remote conversations: The question remains.

How different are your online and offline personalities?
Tomas Chamorro-Premuzic
Remote conversations: UX in Social media

Voor de liefhebber:
www.nngroup.com/reports/social-media-user-experience
Remote conversations: Skype success

- Global household name
- Seeing others on screen enables more intimacy than audio phone
- Enables people to get to know each other better
- Less awkward for young children
Remote conversations: How much realism?

- Is needed in e.g. telepresence to make it compelling?
- *Telepresence rooms* try make the remote people appear to be life-like by using multiple high def cameras with eye-tracking features and directional microphones
- Is skype just as good?
Remote conversations: Improve eye contact
Remote conversations: 3D virtual worlds

- Second Life (2007)
  - Over 8 million users

- What kinds of conversation take place in these environments?

Explore now with the Oculus Rift!

Check out the world’s largest interactive virtual reality playground.
Telepresence

New technologies designed to allow a person to feel as if they were present in the other location

• projecting their body movements, actions, voice and facial expressions to the other location or person
• e.g. superimpose images of the other person on a workspace
Telepresence: Beam (me up)?
Telepresence: Cisco’s future vision
Co-presence

Goffman (1963):
“co-presence exists when people sense that they are able to perceive others and that others are able to actively perceive them.”

Technologies that enable co-located groups to collaborate more effectively
• when working, learning and socializing
• Examples: Smartboards, Surfaces, Wii and Kinect

Maar ook: http://immersedin.tumblr.com/
Co-presence: F2F coordinating mechanisms

- Talk is central
- Non-verbal also used to emphasize and as substitute
  - e.g. nods, shakes, winks, glances, gestures and hand-raising
- Formal meetings
  - explicit structures such as agendas, memos, and minutes are employed to coordinate the activity
Co-presence: Collaborative technologies to support coordination

- There are a variety of software tools designed to support scheduling, planning and coordinating
  - e.g., group calendars, electronic schedulers, project management tools, and workflow tools
- Need to get balance between human and system control
  - too much system control and the users will rebel
  - too little control and the system breaks down
Co-presence: Collaborative technologies
Co-presentation: Awareness mechanisms

- Involves knowing who is around, what is happening, and who is talking with whom

- Peripheral awareness
  - keeping an eye on things happening in the periphery of vision
  - Overhearing and overseeing - allows tracking of what others are doing without explicit cues
Co-presence: Collaborative technologies

ACTIONS CENTER

Settings

Updates were installed
Select this message to learn more.
Thursday

Microsoft Account
You need to fix your Microsoft Account for app
Thursday

Dropbox

RK
.docx changed
changed Interview me
Thursday
Co-presence: Technologies to support awareness

- Provide awareness of others who are in different locations
- Workspace awareness: “the up-to-the-moment understanding of another person’s interaction with the shared workspace” (Gutwin and Greenberg, 2002)
- Examples: ReacTable and Reflect Table
Co-presence: Babble (IBM, Erickson et al, 1999)

Circle with marbles represents people taking part in conversation in a chatroom.
Those in the middle are doing the most chatting. Those towards the outside are less active in the conversation.

Conflict with design that is beautiful. It just takes more work (of course).

=====Thursday 27Aug98 2:28:38 PM EDT From: Wendy in the lab
Anyone know what the thing on the side of the monitor is on the iMac? It's a kind of rectangle with another piece of plastic with a teal-lined hole coming over the rectangle, kind of like a tab??

=====Thursday 27Aug98 2:39:00 PM EDT From: John in the lab
It is the cable port.
Chapter 5

Emotional Interaction

- Emotions and the user experience
- Expressive interfaces
- Annoying interfaces
- Detecting emotions and emotional technology
- Persuasive technologies and behavioral change
- Anthropomorphism and zoomorphism
Emotions and the user experience

- HCI has traditionally been about designing efficient and effective systems

- Now more about how to design interactive systems that make people respond in certain ways
  - e.g. to be happy, to be trusting, to learn, to be motivated

- Emotional interaction is concerned with how we feel and react when interacting with technologies
Emotions and the user experience: connecting it back?

- GSR
- Facereader
Emotions and the user experience: connecting it back?
Emotions and UX

Natural


Time

Thought

Emotion

Gesture

Speech

Mouse

Keyboard

Punch Card
Emotional interaction

- What makes us happy, sad, annoyed, anxious, frustrated, motivated, delirious and so on
  - translating this into different aspects of the user experience
- Why people become emotionally attached to certain products (e.g. virtual pets)
- Can social robots help reduce loneliness and improve wellbeing?
- How to change human behavior through the use of emotive feedback
Emotional design model

- Norman, Ortony and Revelle (2004) model of emotion
Emotional design model: Claims

• Our emotional state changes how we think, e.g.:

  • when frightened or angry we focus narrowly and body responds by tensing muscles and sweating
    • more likely to be less tolerant
  • when happy we are less focused and the body relaxes
    • more likely to overlook minor problems and be more creative
What is beautiful is usable

N. Tractinsky*, A.S. Katz, D. Ikar

Industrial Engineering and Management, Ben Gurion University of the Negev, Beer Sheva 84105, Israel

Received 10 January 1999; revised 2 March 2000; accepted 24 March 2000
Expressive interfaces

- Provide reassuring feedback that can be both informative and fun
- But can also be intrusive, causing people to get annoyed and even angry
- Color, icons, sounds, graphical elements and animations are used to make the ‘look and feel’ of an interface appealing
  - conveys an emotional state
- In turn this can affect the usability of an interface
  - people are prepared to put up with certain aspects of an interface (e.g. slow download rate) if the end result is appealing and aesthetic
Expressive interfaces

User-created expressiveness:

• Users have created a range of *emoticons* - compensate for lack of expressiveness in text communication:
  
  Happy :)  
  Sad :<  
  Sick :X  
  Mad >:  
  Very angry >:-(

• Also use of icons and shorthand in texting and instant messaging has emotional connotations, e.g.
  
  LOL, I 12 CU 2NITE
Expressive interfaces: friendly?

- Microsoft pioneered friendly interfaces for technophobes - ‘At home with Bob’ software

- 3D metaphors based on familiar places (e.g. living rooms)

- Agents in disguised as pets (e.g. bunny, dog) were included to talk to the user to make the user feel more at ease and comfortable
Expressive interfaces: Clippy? Friendly?

• Why was Clippy disliked by so many?
• Was it annoying, distracting, patronising or other?
• What sort of user liked Clippy?
Gamification! (not really in the book 😞)

the application of game-design elements and game principles in non-game contexts

TIP:
https://studio.uxpin.com/ebooks/ux-gamification-redefined/
Gamification

De trekking van 10 februari
Alle winnende lotnummers

Dit is de 1124e trekking. Bekijk het bijbehorende prijzenpakket.

Andere trekking checken

Hoofdprijs
1 milionen

Hoge prijzen
100,000,00
Gamification
Gamification: Easter eggs
Gamification: Easter eggs
Annoying interfaces

Many causes:

- When an application doesn’t work properly or crashes
- When a system doesn’t do what the user wants it to do
- When a user’s expectations are not met
- When a system does not provide sufficient information to enable the user to know what to do
- When error messages pop up that are vague, obtuse or condemning
- When the appearance of an interface is garish, noisy, gimmicky or patronizing
- When a system requires users to carry out too many steps to perform a task, only to discover a mistake was made earlier and they need to start all over again
Annoying interfaces: Error messages

“The application Word Wonder has unexpectedly quit due to a type 2 error.”

Why not instead:

“the application has *expectedly* quit due to poor coding in the operating system”

- Shneiderman’s guidelines for error messages include:
  - avoid using terms like FATAL, INVALID, BAD
  - Audio warnings
  - Avoid UPPERCASE and long code numbers
  - Messages should be precise rather than vague
  - Provide context-sensitive help
Annoying interfaces: Error messages

Error 404 – Web Page Not Found

FastLane Error!

Your login information is incorrect...

Please verify that you typed in your Last Name, SSN and Password correctly. If you still cannot login, Please contact the FastLane Administrator regarding your access rights.
Annoying interfaces: Avoid through more helpful error messages?

“The requested page /helpme is not available on the web server.

If you followed a link or bookmark to get to this page, please let us know, so that we can fix the problem. Please include the URL of the referring page as well as the URL of the missing page.

Otherwise check that you have typed the address of the web page correctly.

*The Web site you seek Cannot be located, but Countless more exist.”*
Annoying interfaces: More helpful error message?

Firefox:

Well, this is embarrassing.

Firefox is having trouble recovering your windows and tabs. This is usually caused by a recently opened web page.

Mozilla Crash Reporter:

We're Sorry

Firefox had a problem and crashed. We'll try to restore windows when it restarts.

To help us diagnose and fix the problem, you can send us a crash report.

- Tell Mozilla about this crash so they can fix it

Windows Internet Explorer:

A webpage is not responding on the following website: facebook.com

You can wait for the webpage to respond, or choose one of the following options:

- Recover this page
- Close this page
Detecting emotions and emotional technology

- Reeves and Nass (1996) argue that computers should be made to apologize and emulate human etiquette.
- Would users be as forgiving of computers saying sorry as people are of each other when saying sorry?
- How sincere would they think the computer was being? For example, after a system crash:
  - “I’m really sorry I crashed. I’ll try not to do it again”
- How else should computers communicate with users?
Back to remote conversations: What do we miss? An example….

Problem Space

- Demands to maintain relationships over long distances continue to increase.
- Remaining aware of the presence and availability of distant people is difficult.
- Most applications are limited to keyboard interaction with poor usability. They don’t support rich emotional communication.
- Physical presence does not always mean one is available for further interaction.
- The lack of expressivity results in inappropriate social interaction and unwanted interruptions.
Back to remote conversations: What do we miss?
Back to remote conversations: What do we miss?

The ComSlipper is a lightweight yet expressive sensible slipper that enhances the quality of computer-mediated relationships.

(geen tentamenstof)
Persuasive technologies and behavioral change

- Interactive computing systems deliberately designed to change people’s attitudes and behaviors (Fogg, 2003)
- A diversity of techniques now used to change what they do or think
  - Pop-up ads, warning messages, reminders, prompts, personalized messages, recommendations, Amazon 1-click
  - Commonly referred to as nudging
Persuasive technologies: Nintendo’s Pocket Pikachu

- Changing bad habits and improving well being
  - Designed to motivate children to be more physically active on a regular basis
  - Owner of the digital pet that ‘lives’ in the device is required to walk, run, or jump
  - If owner does not exercise the virtual pet becomes angry and refuses to play anymore
Persuasive: Phishing and trust

- Web used to deceive people into parting with personal details
  - e.g. Paypal, eBay and won the lottery letters
- Allows Internet fraudsters to access their bank accounts and draw money from them
- Many vulnerable people fall for it
- The art of deception is centuries old but internet allows ever more ingenious ways to trick people
Understanding persuasive elements in phishing e-mails: A categorical content and semantic network analysis

Phishing Attacks Over Time: A Longitudinal Study

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Abstract

In this paper we examine phishing emails received over a thirteen-year period and evaluate how they have changed on a number of characteristics. Using a dual-path model of persuasion, we categorize some characteristics as central (such as persuasiveness) and some as peripheral (such as message appearance),
Anthropomorphism

- Attributing human-like qualities to inanimate objects (e.g. cars, computers)

- Well known phenomenon in advertising
  - Dancing butter, drinks, breakfast cereals

- Much exploited in human-computer interaction
  - Make user experience more enjoyable, more motivating, make people feel at ease, reduce anxiety
Anthropomorphism: The Uncanny valley effect

(Masahiro Mori)
Anthropomorphism: The Uncanny valley effect
Anthropomorphism: Which do you prefer?

1. As a welcome message
   - “Hello Chris! Nice to see you again. Welcome back. Now what were we doing last time? Oh yes, exercise 5. Let’s start again.”
   - “User 24, commence exercise 5.”

2. Feedback when get something wrong
   - “Now Chris, that’s not right. You can do better than that. Try again.”
   - “Incorrect. Try again.”
Anthropomorphism: Evidence to support

- Reeves and Nass (1996) found that computers that flatter and praise users in education software programs -> positive impact on them

“Your question makes an important and useful distinction. Great job!”

- Students were more willing to continue with exercises with this kind of feedback
Anthropomorphism: Criticism

- Deceptive, make people feel anxious, inferior or stupid

- People tend not to like screen characters that wave their fingers at the user and say:
  - Now Chris, that’s not right. You can do better than that. Try again.”

- Many prefer the more impersonal:
  - “Incorrect. Try again.”

- Studies have shown that personalized feedback is considered to be less honest and makes users feel less responsible for their actions (e.g. Quintanar, 1982)
Anthropomorphism: Virtual characters

Appearing on our screens in the form of:

- Sales agents, characters in videogames, learning companions, wizards, pets, newsreaders

Provides a persona that is welcoming, has personality and makes user feel involved with them
Anthropomorphism: Disadvantages of virtual characters

• Can lead people into false sense of belief, enticing them to confide personal secrets with chatterbots
• Annoying and frustrating
  • e.g. Clippy
• May not be trustworthy
  • virtual shop assistants?
Anthropomorphism: Virtual agents

- What do the virtual agents do?
- Do they elicit an emotional response in you?
- Do you trust them?
- What is the style of interaction?
- What facial expression do they have?
- Are they believable, pushy, helpful?
- Would it be different if they were male? If so, how?
Anthropomorphism: What makes a virtual agent believable?

- Believability refers to the extent to which users come to believe an agent’s intentions and personality
- Appearance is very important
  - Are simple cartoon-like characters or more realistic characters, resembling the human form more believable?
- Behavior is very important
  - How an agent moves, gestures and refers to objects on the screen
  - Exaggeration of facial expressions and gestures to show underlying emotions (c.f. animation industry)
Anthropomorphism: Robot-like or cuddly?

Which do you prefer and why?
Vragen?