PEOPLE-CENTRED DESIGN RESEARCH PRESENTATION

Faculty of Graduate Studies
& Research

ENSE 885AW – Spring/Summer, 2020

University of Regina

PAPER #1

- **Helping and Hindering User Involvement – A Tale of Everyday Design**
- **CHI – Human Factors in Computing Systems**
- 1997, Atlanta GA USA
- **Stephanie Wilson, Mathilde Bekker, Peter Johnson, and Hilary Johnson**
  - HCI Group, Department of Computer Science
  - Queen Mary and Westfield College, UK

Abstract

•This paper presents the “obstacles” and “facilitators” to user involvement encountered during the different stages of designing a bespoke application. It also reports the views of different stakeholders throughout the whole process and compare them with their own observations as non-participant observers.

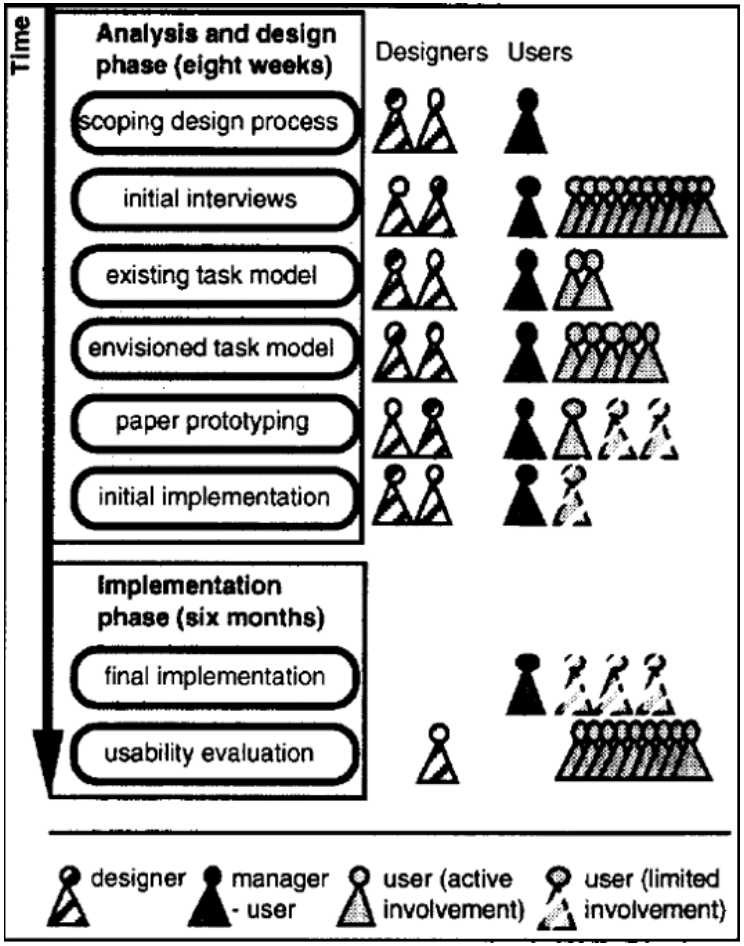
•**Keywords –** User-centered design, YOU != USER

Design Study

- **Application details**
  - Custom-built application in a technical support department of a UK organization (approximately 30 people)
  - Intended for in-house use to support form-based enquires and staff responses, and retrieval of the same from a database

Design Study

- **Design activities**
  – designer – application designer, user interface designer
  – manager-user – a member of staff with technical expertise



Design Study

- **Data collection and analysis**
  - Both designers interviewed four times each during the first phase
  - The researchers gathered all documents produced during the design (background information about the department, services offered, interview copies, task models, requirements, paper and software prototypes, user manuals)
  - Videotaped design meetings with users

Design Study

- **Data collection and analysis**
  - Nine users interviewed for usability test (four involved int the design process)
  - **Obstacle –** a factor which they perceived prevented the users from making a contribution to a design activity, or where they felt there would have been better or more user input if this factor did not exist
  - **Facilitator** - a factor which they perceived facilitated the users in making a contribution to a design activity, or where they felt there would have been worse or less user input if this factor did not exist

Results

1. Gaining access to users

O/ F	Summary of comment(s)	View
F	UI designer championed cause for user involvement	R
F	UI designer was highly motivated to involve users	D
F	UI designer convinced management of the value of user involvement in design	D
F	Management receptive to UI designer's ideas	D
O	Absence of the UI designer in phase two resulted in little user involvement	R
O	Structure within which users could offer comments became unclear in second phase	U
O	Users felt their views were not taken into account in second phase of project	U
O	One user did not know to whom he should give his comments on the system	U
O	The designers decided not to involve users in the design of one subsystem	D
O	There was limited time for the project, and thus also to involve the users	D
O	The designers decided that they would only involve a limited set of users	D
F	Designers made the selection of users with the help of the manager-user	D
F	Users were chosen because of perceived knowledge and experience	D
F	Three users were selected to participate in subsequent modelling and design activities	D
F	Users were keen to be involved in design	U
O	The needs of other users were disregarded	R

O = Obstacle
F = Facilitator
D = Designer
U = User
R = Researcher

Results

2. Organising and facilitating ongoing user involvement

O/F	Summary of comment(s)	View
F	Management gave consent to involve users	D
F	Users were willing to talk to designers	D
F	Manager-user explained structure of dept	D
O	Users not told it was okay to take time to be involved in design	R
O	Management and designers put no extra effort into convincing users to be involved	R
O	There was poor dissemination of information about design project within department	U
O	Junior staff were unaware of the project	U
O	Users were very busy	D
O	Difficult to make appointments with users	D
O	Designers expected users to come to them	U
O	Designers found it difficult to talk to users in their working environment	D
O	Users did not respond to email messages	D
O	Meetings were badly organised	D/U
O	Meetings started off on the wrong foot	D
F	Designers were located close to the users making contact easy	R
O	Designers felt the users were checking on their progress	D
F	Designers eager to involve motivated users	D
O	Designers reluctant to involve less motivated users	R
F	Users were motivated because of previous experiences and politics	D
O	User felt system was irrelevant to his work	U
O	Users unaware of opportunity to be involved	U
O	Users lacked confidence and were reluctant to talk to the designers	U
F	Users that were involved became more motivated and volunteered extra input	D

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Results

3. Facilitating contributions to design

O/ F	Summary of comment(s)	View
F	Easier for users to contribute if they are involved throughout the process	D
F	Designers came prepared to meetings	D
F	Designers were not judgmental	U
F	Meetings were not intimidating	U
F	Input was treated as confidential	U
O	Users agreed too quickly with designers	D
O	UI designers might have led the users	D
O	Users were unaware of implementation constraints during task model activities	U
O	UI designer didn't mediate one meeting well	D/U
F	Individual meetings first with users allowed them to give their opinion openly	D/U
F	Group meetings with users facilitated reaching agreement	D
O	Users from one group attended a meeting in larger numbers than another user group	U
O	Conflicts were brought out in the open	D
F	Users asked about their area of expertise	D
F	Designers chose expert users to go first	D
F	Design representations acted as focus for communication	D
F	Users came up with ideas for notations	D
F	Whiteboard provided a useful focus	D/U
F	Some users were active during meetings	D
O	Some users were passive during meetings	D
O	One user wanted to work at his own pace	D
F	A hard copy of task model used to get input from more users	D
O	One user had a negative attitude towards paper prototyping	D/U
O	Hard to judge interaction issues with paper prototypes	D/U
F	First user negotiated task model notation	D
O	Subsequent users had to accept the notation	R
F	Some users found the notation useful	U
O	Some users found the notation confusing	U
O	Users did not always have enough time to assimilate and understand the models	D
O	The notation did not capture all task aspects	U
O	Some users misunderstood the notation	D

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Lessons Learned

- Motivate all stakeholders
- Select a representative cross-section of users
- Involve a champion for the cause of user involvement
- Organise meetings effectively
- Ensure active management buy-in
- Don’t expect the users to be designers
- Follow user involvement through to the end
- Be flexible
- Facilitate later involvement through earlier involvement
- Educate users about the whole design process
- Organise both individual and group meetings

Conclusion

- Many complexities of involving users in design like need to balance conflicting demands
- This work, unlike earlier studies, has focused on both obstacles and facilitators to user involvement
- The case study indicates that it is necessary to make careful trade-offs between these factors in order to project the positive side of involving users in the design

Future Work

- The researchers planned on conducting further analyses of
  - how the user's contribution were actually incorporated into the final design, and
  - the efficacy of those contributions by studying their impacts on the usability of the system

PAPER #2

- **Ambiguity as a Resource for Design**
- **CHI – Designing Design**
- 2003, Ft. Lauderdale FL USA
- **William W Gaver[1], Jacob Beaver[1], Steve Benford[2]**
  - [1]Interaction Design Research Studio, The Royal College of Art, London UK
  - [2]The Mixed Reality Laboratory, University of Nottingham, Nottingham UK

Abstract

- This paper is an argument against the usual belief that ambiguity is anathema in human computer interaction. It proclaims that ambiguity is a resource for design and that it can be used to further personal engagements with systems. This is illustrated using examples from contemporary arts and design practice.

- **Keywords –** Interaction design, Emotion, Affective UI

Four Systems that use Ambiguity

- **Projected Realities**
  – a system intended to help increase the presence of older people in a large Dutch housing estate - Bijlmer

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Four Systems that use Ambiguity

- **Projected Realities**
  - – little context provided for the images and slogans presented
  - – benches created ambiguity between sitting and viewing
  - – local people were found to be attracted by this ambiguity to engage with the system

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Four Systems that use Ambiguity

- **Desert Rain**
  - a mixed reality performance (touring internationally since 1999)
  - designed to provoke participants to re-evaluate boundaries between reality and fiction
  - achieved by literally making these boundaries ambiguous

Four Systems that use Ambiguity

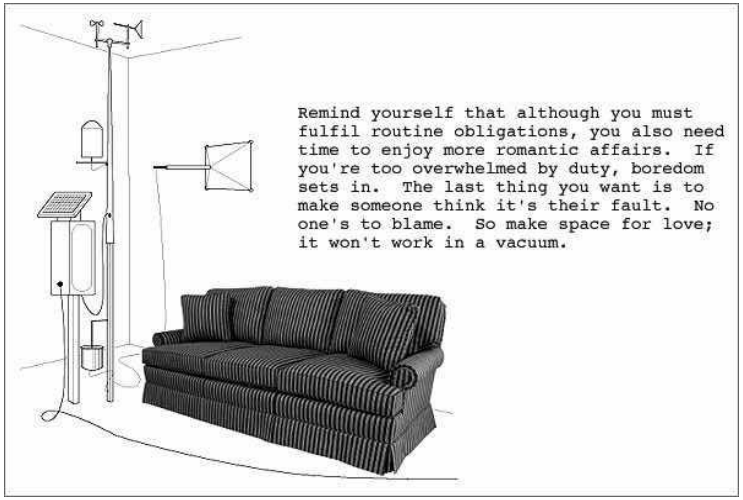
- **The Pillow**
  – an LCD screen displaying geometric shapes embedded in a plastic brick enclosed in a plastic pillow
  – electromagnetic waves (mobile phones, taxis, radio, etc) from surrounding environment processed to form sounds

Four Systems that use Ambiguity

- **The Pillow**
  – the generated information is distorted to producing an intriguing effect
  – the pillow itself is ambiguous – radio or aesthetics?
  – the ability to eavesdrop on the surrounding environment raises ethical questions about technology

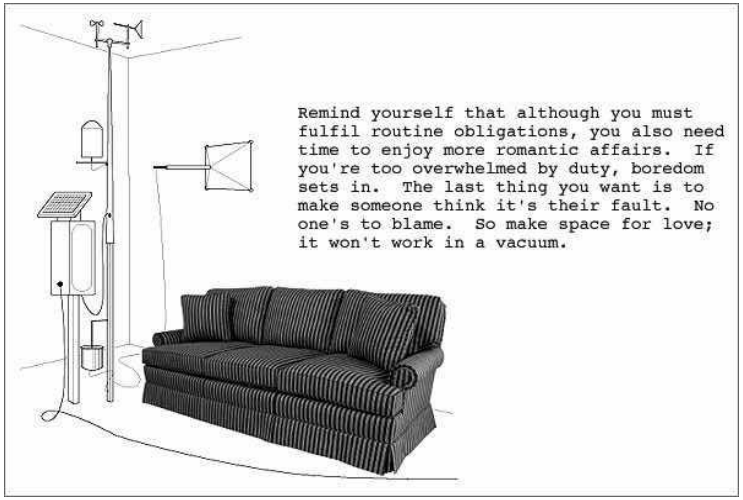
Four Systems that use Ambiguity

- **Home Health Monitor**
  - "the superstitious home"
  - a system that gives feedback about the home's emotional, social, and spiritual health on a daily basis



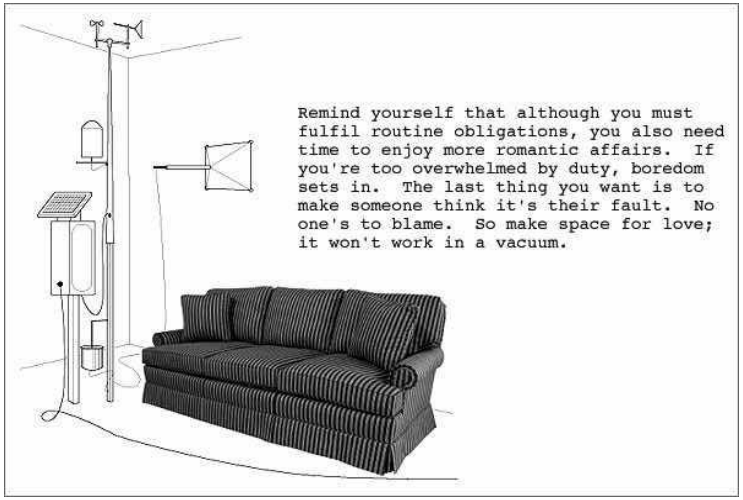
Four Systems that use Ambiguity

- **Home Health Monitor**
  – data collected through sensors ranging from light and temperature to stroke rate of hairbrush and state of toilet state
  – sensor readings mapped to sentences from published horoscopes to generate a tailored horoscope everyday



Four Systems that use Ambiguity

- **Home Health Monitor**
  – the generated horoscopes use a vague language providing the people knowledge about their relationship with their home
  – all this ambiguity result in an organized yet questionable idea about one's emotional state



Types of Ambiguity

- **Ambiguity of Information**
  – ambiguity that arises by the way information is presented

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  – ambiguity that arises by the way information is presented
  – Leonardo da Vinci's Mona Lisa
  – Picasso's Guernica

Types of Ambiguity

- **Ambiguity of Information**
  – Bystander - uses ambiguity to challenge users to join their knowledge to clues offered by the system to play the game

Types of Ambiguity

- **Ambiguity of Context**
  – ambiguity that arises because certain things suggest different meaning different contexts

Types of Ambiguity

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  – Duchamp's Fountain

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Types of Ambiguity

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  – ambiguity that arises from a viewer's personal relationship with some thing

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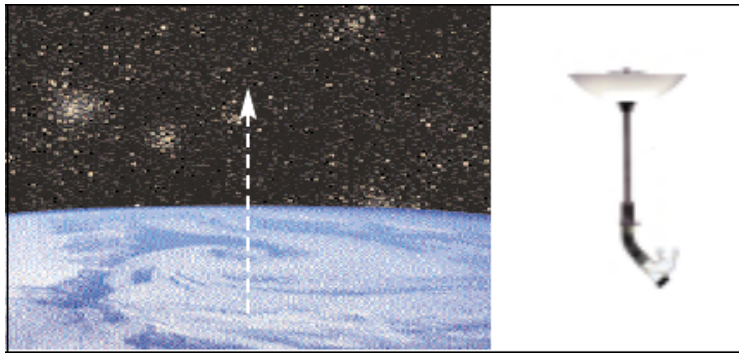
  – Gaver and Martin's Prayer Device



Tactics for Using Ambiguity

- **Enhancing ambiguity of information**
  - Use imprecise representations to emphasize uncertainty
  - Over-interpret data to encourage speculation
  - Expose inconsistencies to create a space of interpretation
  - Cast doubt on sources to provoke independent assessment

Tactics for Using Ambiguity

- **Creating ambiguity of context**
  - Implicate incompatible contexts to disrupt preconceptions
  - Add incongruous functions to breach existing genres
  - Block expected functionality to comment on familiar products

Tactics for Using Ambiguity

- **Provoke ambiguity of relationship**
  - Offer unaccustomed roles to encourage imagination
  - Point out things without explaining why
  - Introduce disturbing side effects to question responsibility

Conclusion

- Ambiguity is not a virtue in itself, nor should it be used as an excuse for poor design
- If done correctly, ambiguity can be used a weapon to make designs more interactive, engaging, and thought-provoking
- In summary, ambiguity allows designers to overcome the limitations of technology by encouraging users to interpret things themselves

Concluding Remarks

- Both the papers had some things unconventional in their work.
  - Paper 1, unlike its contemporaries, focused on both obstacles and facilitators to user involvement
  - Similarly, Paper 2 argued against the common belief set by their fellow researcher's works that claimed ambiguity was the nemesis of usefulness and usability

References

- All figures and tables, unless stated otherwise, are from respective research papers
- **Desert Rain video**, https://www.youtube.com/watch?v=QMeW5snKvtI
- **Mona Lisa**, https://en.wikipedia.org/wiki/Mona_Lisa
- **Guernica**, https://en.wikipedia.org/wiki/Guernica_(Picasso)
- **Fountain**, https://en.wikipedia.org/wiki/Fountain_(Duchamp)
- **La Bais-ô-Drôme**, https://www.ateliervanlieshout.com/work/la-bais-drme/
- **Prayer Device**, Gaver, William & Martin, Heather. (2000). Alternatives: exploring information appliances through conceptual design proposals. 2. 209-216. 10.1145/332040.332433.

Thank You