How acceptable is this robot to you?

Insights from Social Robotic Research in a Geriatric Ward in a Hospital in Paris

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acceptable is

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The Broca Living Lab

- The Broca Living Lab is
 - A lab of Paris University / AP-HP
 - A place to design, test and assess assistive services and products to support individuals with NCDs and their caregivers
 - A user-centered / open- innovation approach
 - A « broker » between users, geriatrics professionals, companies, public institutions...
 - A meeting place for people and ideas
- The questions addressed in BLL's research
 - How effective are services and products designed to support elders ?
 - How acceptable are they ?

Method

• What is their impact on care practices / environment ?

Discussion

• What are the ethical requirements for the implementation of new technologies in geriatrics ?



A workshop held with elder volunteers from the BLL to sketch their ideal assistive robot (11/25/2021)



Introduction

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The Spring project

- An EU research project (H2020-ICT)
- A consortium of 8 partners
- · Main objectives of the research
 - Develop and validate a social assistive robot
 - · Perform multi-modal interactions with several speakers
 - Operate in a crowded environment
 - Assess its acceptability by users and staff of Broca's Day Care Hospital
- ARI, the robot of the project

Method

- Learning (Imitation learning)
- Vision (3D perception, Face and object recognition)
- Social (Emotion Recognition, Human-Robot Interaction, natural language)
- Process environmental data

Results

• Adaptation (personalization of the robot's behaviour)

Discussion



The robot ARI



Introduction

The Broca Living Lab in the project

- The tasks assigned to the Broca Living Lab (APHP)
 - Facilitate the experimentation in the Day Care Hospital of Broca
 - Provide and enforce the ethical framework of the research
 - Assess the impact the robot on the Day Care Hospital
 - · Assess the acceptability of the use of robotics in geriatrics
- Acceptability

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this robot to you?

acceptable

- Factors that determine an individual's intention to use or not to use an object, and its actual use"
- Social issues related to the implementation of the robot in a geriatric unit

Discussion





The workflow of the research



Introduction

Method

Results

Discussion

The methodology

- An ethnography of the Day Care Hospital
 - A qualitative approach

Method

Results

- Extensive observation ; comprehensive semi structured interviews
- Different observation areas (waiting room, refectory, consultation room, secretariats, corridors and elevators)
- Various professional profiles (medical, paramedical, administrative) and users
- Provide material to answer the following questions

Discussion

- How the day care hospital is actually organized on a daily basis ? (Objective #1)
- How people see the coming of a social robot in the day care hospital ? (Objective #2)
- How people see the overall spread of robots in geriatrics (Objective #3)



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The mapping of the unit

Objective # 1

- Understand how the medical care is organized in time and space
 - How does the Day care hospital work?
 - Where and when users of the DCH would meet the robot?
 - What part of the work would be impacted ?

Results

- 21 days of direct observation in the unit
- Many encounters with the robot are expected
 - A patient goes through almost the entire unit during the day.
 - A patient may meet the robot at least 4x
 - The acceptability of the robot by patients is critical



Map of a standard care pathway for a patient in Broca's DCH



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A broad spectrum of opinions on the robot

Objective # 2

 Collect users' and professionals' opinions on Ari, the robot of the project

Results

- A diverse sample
 - Semi structured Interviews with Secretary (5), Psychologist (5), Nurse (3), Doctor (1), Archivist (2)

Discussion

- Open interviews with users (many !)
- Many different standpoints

Method

Introduction

Expectations and apprehensions

Results

Balanced and nuanced standpoints •



- Many types of use possible
- A great showcase for the service



Cautious

- A « gadget »
- A challenge to safeguard people's intimacy and Privacy
- Do not fit the place

Skeptic

•A project of little use An additional burden A source of nuisance

A typology of the informants' opinions towards the robot

Discussion

Objective # 3

 Initiated an in-depth discussion about the use of social robots in geriatrics

Results

- The limitations of the human-robot relationship
 - Some parts of the work cannot be transferred to the robot
 - The efficiency of a service is not always needed

Some part to the robo
The efficie needed
A great tool if

- it is put at the service of all
- It is carefully implemented



How acceptable is

Introduction Method Results Discussio

Patients with anxiety are always looking for someone to ask questions to, not necessarily to get an answer, but for the human contact. (...) They ask every time not because they don't know, but to maintain contact and say 'don't forget me'. These people, [the robot] will not necessarily satisfy them. They will probably see [the robot], then go to the nurse and say [the robot] said thisthat, is that true ? » Ingrid, Neuropsychologist