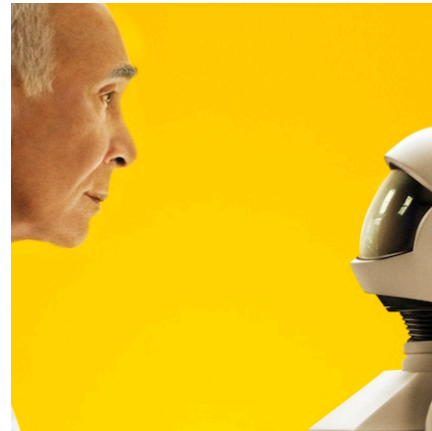




# What if a Robot Could Help Me Care for My Parents?

Using Photo Elicitation with  
Pre-Users of Remote  
Monitoring Technologies



**TQR 2016**  
**1.14-16.16**

**The Futures of  
Qualitative  
Inquiries**



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**NOVA SOUTHEASTERN  
UNIVERSITY**

**College of Engineering  
and Computing**

**2020 – 21 Mil**

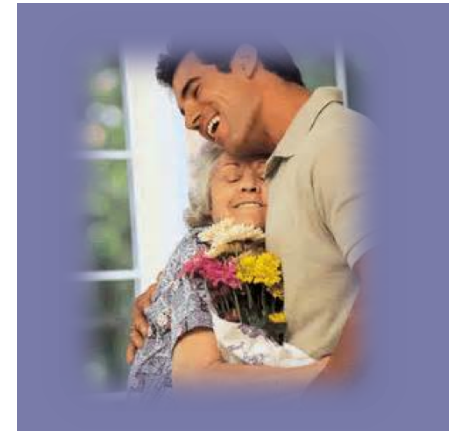
**2006 – 5.3 Mil**

- Growth in population of people age 85 and older ([www.agingstats.gov](http://www.agingstats.gov)).
- Older adults “aging in place” as alternative to senior communities, assisted living, and skilled nursing facilities.



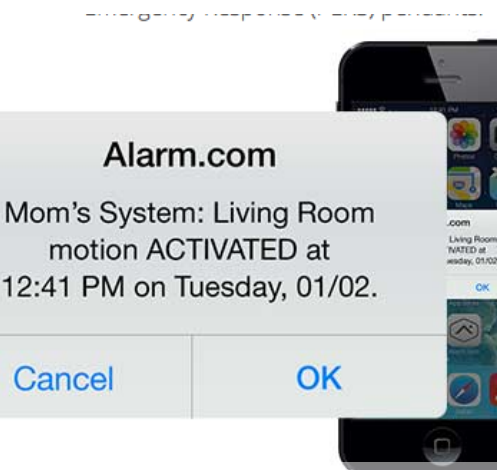


**Informal caregivers** are family members who are unpaid to provide various levels of care (e.g., monitoring, shopping, bathing, and companionship) for their family members (e.g., parent, spouse, sibling, aunt, uncle, etc.) (Ohio Department of Aging, n.d. )





**Surrogate Support System**



**Mobile Emergency Devices**



**Wearable Sensors**



**Telepresence Robots**

# Remote Monitoring Technologies (RMTs)

Technologies that can sense, record, and communicate various activities of older adults who are living in their homes.



# Trends



- Growth in elderly population
- Electing to “Age in Place”
- Family members as informal caregivers
- Advancements in RMTs such as wearable sensors, mobile emergency devices, and teleoperated robots





# Literature Review



- Older adults' acceptance and use of technology in general (Barnard, Bradley, Hodgson, & Lloyd, 2013; Burnett, Mitzner, Charness, & Rogers, 2011; Leung, et al., 2012; Mitzner et al., 2010)
- Technologies to support persons with dementia and their caregivers (Rosenberg, Kottorp, & Nygard, 2012; Topo, 2009)
- Healthcare providers' perceptions of technologies for monitoring older adults (Thompson & Thielke, 2009)
- How reviewing observations of daily living (ODLs) affect two main stakeholders: (1) the individual and (2) their physicians (Lee & Dey, 2014)
- Telepresence robot for home care assistance of elderly people (Michaud et al., 2007)



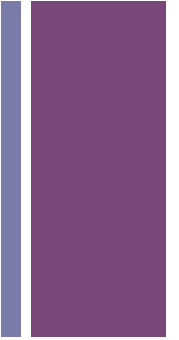
# Opportunity



- Many of the studies focused on the older adult, the physician, or the healthcare provider/caregiver in a care facility and their acceptance and use of RMTs.
- An understanding of the needs of informal caregivers (i.e., family members) and their perceptions of RMTs to monitor and support their loved ones who are aging in place is limited.



# Purpose



- The purpose is to explore how informal caregivers perceive RMTs and their use for monitoring and supporting their elderly care recipients.
- Phase one of a multi-phase research agenda.





# Research Questions



**1**

What problems are expressed by informal caregivers regarding the current way they monitor and support the health, well-being, and independence of their elderly care recipients?

**2**

What are the perceived advantages (positive effects) and disadvantages (negative effects/risks) of using RMTs to monitor and support the health, well-being, and independence of their elderly care recipients?

**3**

What are the needs of informal caregivers relative to their adoption and use of RMTs?



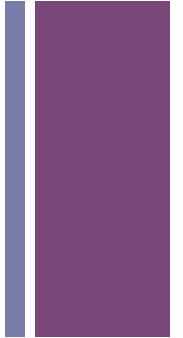
# Research Design



- Qualitative descriptive study (Sandelowski, 2000; 2010)
- **Methods:** Questionnaire followed by semi-structured interview using photo elicitation techniques (Harper, 2002)
- **Data Analysis:** Qualitative content analysis (Sandelowski, 2000; 2010)
- **Participants and Setting:** Informal caregivers who are caring for a relative (e.g., spouse, parent, sibling) who is age 75 or older and are providing this care in an in-home setting
  - 30-50 for questionnaire
  - 8-10 interviews



# Photo Elicitation



- “Photo elicitation is based on the simple idea of inserting a photograph into a research interview. The difference between interviews using images and text, and interviews using words alone lies in the ways we respond to those two forms of symbolic representation” (Harper, 2002, p. 13).
- Various visual forms including photos, videos, paintings, cartoons, etc.



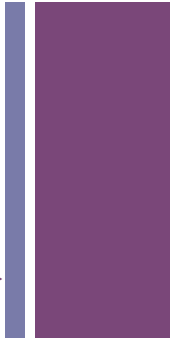
# Brief History



- First named by John Collier (1957) in *American Anthropologist*.
- 1967, Collier's text on visual anthropology was published.
- 1987 was the inaugural issue of *Visual Anthropology*.
- PE has not gained much traction, perhaps because it is mentioned informally within the research and not as an identified method.



# Continuum



**Scientific** (e.g., visual inventories of objects, people, and artifacts.) Typically used in anthropological field studies.

**Images Depicting Events** (e.g., work and school photos). Aim to connect individuals to experiences.

**Intimate Dimensions of the Social** (e.g., family, self, social group).

PE studies are common in four areas:

- social organization/social class/family
- Community/historical ethnography
- Identity/biography/autobiography
- Culture/cultural studies

Source: Harper (2002)



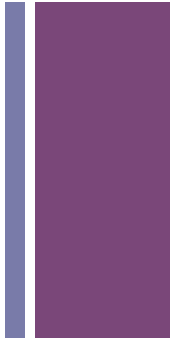
# PE in HCI



- Need for prescriptive methodological guidance to advance value-sensitive design and human-computer interaction (HCI) research by understanding the values in context (Le Dantec, et al., 2009).
- “It is precisely the ability of photo elicitation techniques to broach ambiguity and facilitate co-creation of meaning between interviewer and respondent that leads us to the view that it represents a class of empirical methods that may be highly instructive for engaging respondents in questions about values” (Le Dantec, et al., 2009, p. 1144).



# Benefits of PE



- Make participants feel more comfortable/at ease (Schwartz, 1989; Sopcak, Mayan, & Skrypnek, 2015)
- Enhance communication (Schwartz, 1989)
- Enhance quality of the data (Sopcak, et al., 2015)
- Create sense of agency (Sopcak, et al., 2015)
- More contextual cues (Le Dantec, et al., 2009)
- Orient participants to the technology (Le Dantec, et al., 2009)





# PE Considerations



## ■ Breaking frames

- “Break the frame” of the participant’s normal view (use of real-world examples within context vs. stock photos from web sites)

## ■ Digital Displays

- iPad to display photos and videos during face-to-face interviews
- Digital photos/videos during Skype interviews

## ■ Participant-Produced

- Consider participant-produced photographs to capture context and situations

## Notification



Dad has not gotten out of bed yet. It is more than 90 minutes past his normal wake-up time.

“CarePredict® Tempo™ learns the normal daily activity patterns of your loved one. It monitors and records these daily patterns over time. If these patterns begin to change in ways that could indicate a health issue may be developing, an alert is sent” (<https://www.carepredict.com/families.html>).



# + **The Future of Qualitative Inquiries**

“When two or more people discuss the meaning of photographs they try to figure out something together. This is, I believe, an ideal model for research” (Harper, 2000, p. 23).





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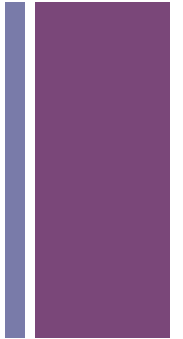


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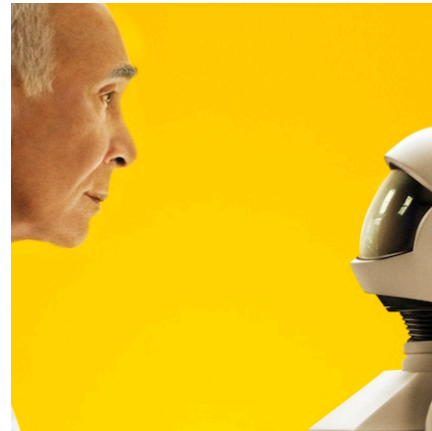
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