

Interactive Memories: Reminiscing Through Technology

Dementia
causes interference with activities of daily living through the loss of memories [1], including autobiographic memory and self-identity [2].

Project Intermem

- Interdisciplinary consortium of researchers, care facilities and technology companies
- User centred approach: adapted contextual design process
- Iterative design process with need for formative evaluations



Problem: Evaluation

Requirements

- Embed evaluation into the daily routine
- No self-report methods due to speech impairments and overtaxing cognitive abilities
- Instant documentation of emotions in the context of specific interactions

Available UX methods

- + Linking emotion to their triggers, e.g. LEMtool [3]
- + Simple emotion pictorials, e.g. PrEmo2 [4]
- Mostly self-report tools
- Include laddering
- Optimized for websites or even embedded into them



Available Quality of Life Methods

- + Developed for dementia context
- + Validated emotions, e.g. OERS [5]
- Complex tools, e.g. DCM [6]
- Vague observation timeframes

Our Solution: Proxemo



+ Videorecordings of interactions

Features

- Set emotional timestamps by tapping on a corresponding emoticon
- Emoticons represent the five OERS [20] categories: pleasure, sadness, anxiety/fear, anger and general alertness
- Link to interactions when synchronized with videorecordings

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Preliminary Results

Cognitive Walkthrough of high fidelity prototype
with 2 dementia experts and 2 UX-evaluators

- + Keen on using it in the context
- + Emotional states easy to learn for UX evaluators and immediately recognised as OERS scale by dementia experts

Additional features evaluators wished for (future work)

- Exchangeable emoticons
- Rate emotions of multiple observed people

Discussion

- Focus on large tangible interfaces
- Evaluation in dementia care facilities needed

References

1. World Health Organization. 1992. The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines. Geneva: World Health Organization.
2. Donna Rose Addis and Lynette Tippett. 2004. Memory of myself: Autobiographical memory and identity in Alzheimer's disease. Memory 12, 1, 56-74.
3. Gijs Huisman, Marco Van Hout, Elisabeth Van Dijk, Thea Van Der Geest, and Dirk Heylen. 2013. LEMtool: measuring emotions in visual interfaces. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems ACM, 351-360.

4. Gaël Laurans and Pieter Desmet. 2012. Introducing PREMO2: New directions for the non-verbal measurement of emotion in design. In Out of Control: Proceedings of the 8th International Conference on Design and Emotion, London, UK, 11-14 September 2012.
5. M. Powell Lawton, Kimberly Van Haitsma, and Jennifer Klapper. 1999. Observed affect and quality of life in dementia: Further affirmations and problems. Journal of Mental Health and Aging 5, 1, 69-82.
6. Tom Kitwood and Kathleen Bredin. 1992. The Dementia Care Mapping Method Bradford, England: University of Bradford.