



**HAL**  
open science

## **Preliminary study of human interactions during entertainment by a facilitator using a cognitive stimulation medium (Mémoire-RED) in a nursing-home setting**

Jenny Duchier, Nadine Vigouroux, Elizabeth Bougeois, Frédéric Vella,  
Blandine Boudet, Pierre Rumeau

### **► To cite this version:**

Jenny Duchier, Nadine Vigouroux, Elizabeth Bougeois, Frédéric Vella, Blandine Boudet, et al.. Preliminary study of human interactions during entertainment by a facilitator using a cognitive stimulation medium (Mémoire-RED) in a nursing-home setting. *Non-pharmacological Therapies in Dementia*, 2015, 3 (2), pp.181-186. hal-01316826

**HAL Id: hal-01316826**

**<https://hal.science/hal-01316826v1>**

Submitted on 17 May 2016

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



## Open Archive TOULOUSE Archive Ouverte (OATAO)

OATAO is an open access repository that collects the work of Toulouse researchers and makes it freely available over the web where possible.

This is an author-deposited version published in : <http://oatao.univ-toulouse.fr/>  
Eprints ID : 15454

**To link to this article :**

URL :

[https://www.novapublishers.com/catalog/product\\_info.php?products\\_id=55494&osCsid=a79df5592f9331df1e8f8cf43e6796c1](https://www.novapublishers.com/catalog/product_info.php?products_id=55494&osCsid=a79df5592f9331df1e8f8cf43e6796c1)

**To cite this version** : Duchier, Jenny and Vigouroux, Nadine and Bougeois, Elizabeth and Vella, Frédéric and Boudet, Blandine and Rumeau, Pierre *Preliminary study of human interactions during entertainment by a facilitator using a cognitive stimulation medium (Mémoire-RED) in a nursing-home setting.* (2015) Non-pharmacological Therapies in Dementia, vol. 3 (n° 2). pp. 181-186. ISSN 1949-484X

Any correspondence concerning this service should be sent to the repository administrator: [staff-oatao@listes-diff.inp-toulouse.fr](mailto:staff-oatao@listes-diff.inp-toulouse.fr)

# **PRELIMINARY STUDY OF HUMAN INTERACTIONS DURING ENTERTAINMENT BY A FACILITATOR USING A COGNITIVE STIMULATION MEDIUM (MEMOIRE-RED) IN A NURSING-HOME SETTING**

*J. Duchier<sup>1,\*</sup>, N. Vigouroux<sup>2</sup>, E. Bougeois<sup>4</sup>, F. Vella<sup>2</sup>,  
B. Boudet<sup>3</sup>, and P. Rumeau<sup>1,3</sup>*

<sup>1</sup>UMR Inserm-Université Toulouse 3 Paul Sabatier, France

<sup>2</sup>IRIT UMR CNRS – Université Paul Sabatier, Toulouse, France

<sup>3</sup>Laboratoire de Gérontechnologie La Grave / Gérontopôle / CHU Toulouse, France

<sup>4</sup>LERASS, Université Toulouse 2 Jean Jaurès, France

## **RELEVANCE**

According to the literature and our practice, most of the cognitive stimulation based on technological tools are designed for individual, « face to face » use and are a transposition of regular neuropsychological tests and rehabilitation exercises (Tarraga et al. 2006). A different approach is proposed to fulfil the needs for entertainment; such as reminding memories with the help of souvenirs of the patients own life. (Damianakis et al. 2010) could show it was possible, first with the help of a research assistant, then with that of the family or even by personal use, to stimulate remembrance through old souvenirs presented on a digital medium. The difficulty is the high cost in term of manpower to get the relevant information from the family. Other teams have proposed solutions that would limit that preliminary work : using data from the social media (Cosley et al. 2009) and/or wearing a camera to save daily activities (Lee and Key, 2007) et (Sellen et al. 2007). In any case, those tools are based upon individual customization and so limiting the number of patients who could attend a same session. Could use general tools developed for entertainment in nursing-home as a cognitive stimulation alternative?

In a preliminary study we have observed the adoption of the Mémoire-red™ tool by the facilitator and the interaction with and between the residents during a regular entertainment session with cognitively impaired residents in a nursing-home. This session was part of a structured animation program where the residents regularly take part.

---

\* Corresponding Author: Jenny Duchier, UMR 1027 Inserm/Université Toulouse 3, Faculté de Médecine, 37 allées Jules Guesde, 31062 Toulouse cedex, France, jenny.duchier@inserm.fr

## MATERIAL AND METHOD

Mémoire-red™ is developed by a seasoned nursing-home facilitator for entertainment sessions. This interactive software contains varied exercises organized in an empirical difficulty gradation.

The facilitator is commanding the exercises with the remote control of a DVD player. A LCD projector is showing the contents on a large screen. Residents sit in a circle facing the screen, the facilitator stands slightly behind the screen and moves to point images on the screen. The entertainment session takes place from 14h30 to 15h30 in a dedicated room.

The session we observed used the “Visual workshop, level 1 and 2” and the “Quiz workshop” of Mémoire-red™. The participants had to identify and recognise object from the daily life (within cooking and gardening context). In level 1, a first view gave the participant the opportunity to discover the items with the directions of the facilitator (items were pointed and/or named by the participants or the facilitator in case they couldn't), then, a in second view the items would change places and had to be identified and named again by the participants under supervision by the facilitator. In level 2, there would be a missing item in the second view and it was ask to identify and name it. In the « Quiz », a definition would appear on the screen and one participant would read it in high voice when asked by the facilitator. Then the word answering the definition would be proposed with its syllables in disorder: the participants had to give the right answer to the definition.

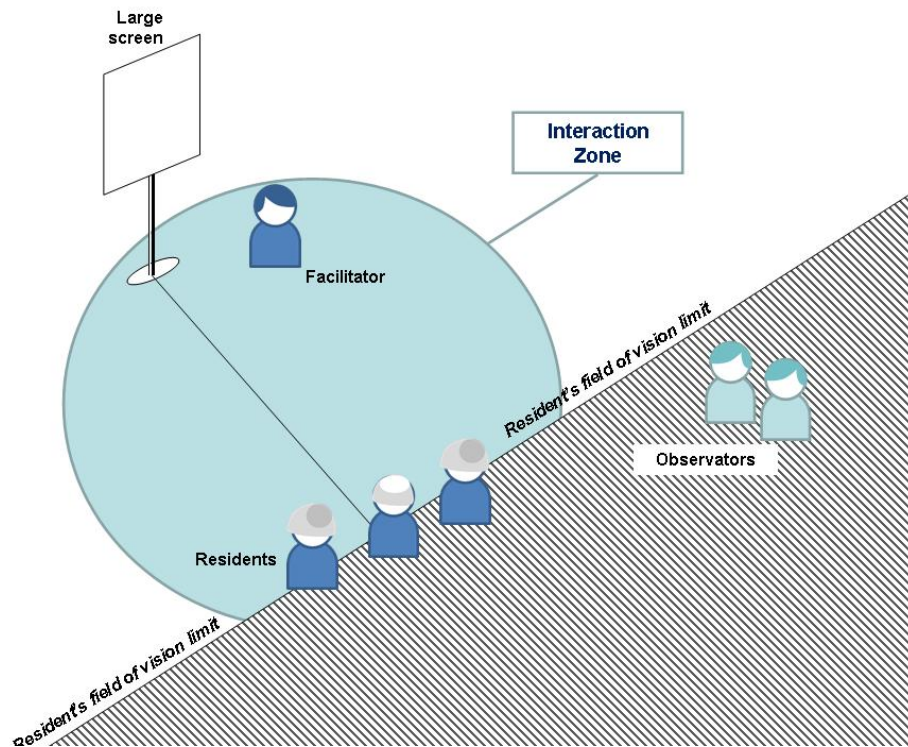


Figure 1. Location of participants and devices during an entertainment session.

The participants were already in the entertainment room when the observers arrived. The observers remained silent, standing back from the participants (Figure 1). For method purpose, only the facilitator and the administration of the nursing-home had been contacted in advance. For ethical reasons, no film or audio recording was taken. To be as transparent (both to respect the work of the facilitator/participants and avoid modify the interaction) to the entertainment as possible only two researchers (ethnography and communication) took part in the observations.

## RESULTS

Five women and one man took part in the session from the start, a sixth woman joined the session later. They were described by the facilitator as “already impaired but with some abilities spared”. According to the observation they would be Clinical Dementia Rating (CDR) 2 (moderate) for most of them and CDR 3 (severe) for two of them, Functional Assessment STaging scale span from 5 (which is moderate dementia) to 6b (which is moderately severe dementia). One of the female participants would fall asleep during “Visual workshop” by got more active during the “Quizz”.

The facilitator would manage turn-taking and speaking time. Some residents would rise spontaneously their hand to as to speak. Turn-taking and speaking time would be managed according to the participation level and the remaining capabilities as assessed by the facilitator.

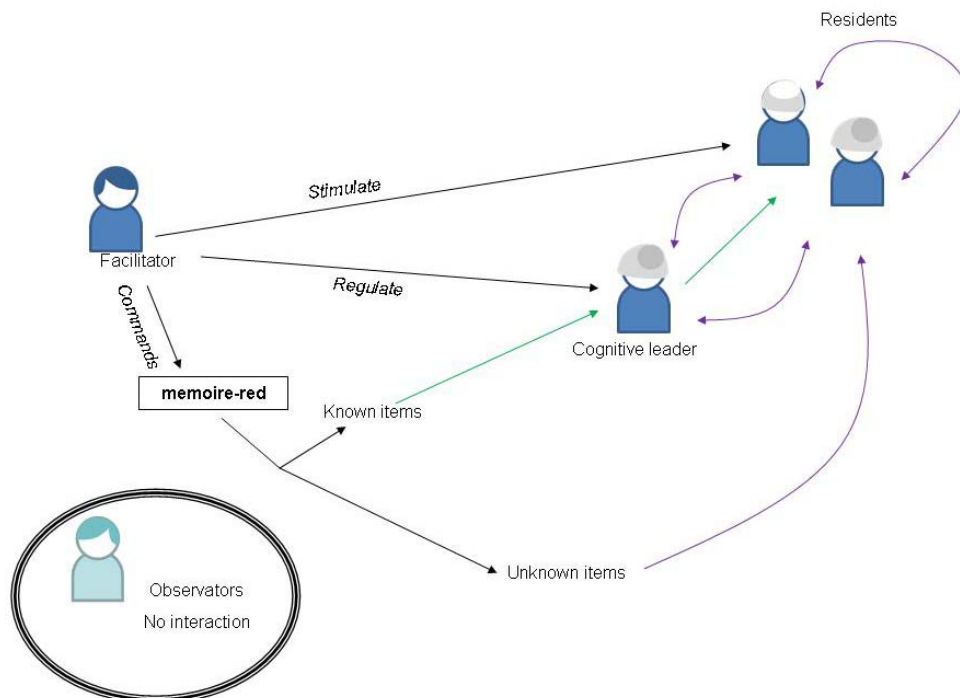


Figure 2. UML Diagram of actors showing in green the type of interaction for an easily named item and in violet the type of interaction for a little known item.

If the answer was known by the participants, a cognitive leader would emerge; the facilitator would then regulate the intervention and foster intervention by the other participants (ex.: on a seeder would not at first be recognised by most participants, then the others would argue what was shown on the screen was not relevant and they would more readily use the name in local language). When the item was not easily named; interactions between the participants would develop with the facilitator's help. Participants would group or oppose on a proposal, then some would laugh telling stories about past episodes (e.g., with a tractor, an old coffee maker) (Figure 2).

When the session finished the interactions that were built in common (co-construction) with the facilitator during the workshop stopped instantly.

## DISCUSSION

To our knowledge there is no work in the literature on group cognitive stimulation by a facilitator for nursing home residents with severe cognitive impairment. In a psychosocial impact study of a personal tool based on the life history of the person, administrated initially by a research assistant then provided to be used on a weekly basis; authors filmed the interaction between the assistant and the participant. The author observed a potential variability depending whether the tool was used individually or in family; they stated a more detailed study of interactions was required (Damianakis et al. 2010). (Cohene et al. 2005) for another life history based cognitive stimulation tool proposed an ethnographic approach to cope with the communication difficulties faced by late stage Alzheimer's disease patients. Therefore, they used a case study of a long term care unit patient during weekly one hour activities (bingo, creative and manual activities, choral song and meals). Alike this last study, we are considering a technological device of cognitive stimulation already implemented in a structured activity.

We could observe that participants would display behaviour more alike to a work or an exercising situation than a playful situation. The designer had aimed at a playful activity. We cannot say if this is due to the tool itself or the way it is proposed by the facilitator. We would be interested in observing how the session is prepared and how the participation of the residents is obtained. We wonder about the impact of the cognitive impairment, its stage, and of the social representations (social imperative to maintain ones autonomy, metaphor of the school master) on how the residents perceive the session. It would be interesting to know if the facilitator would change the way she uses the tool with residents without cognitive impairment. Would they find it more playful? We could observe a discrepancy between the expected difficulty and the behaviour of the residents: the "Quizz" seems easier, from observing the participants, than the "Visual workshop". Would it be due to the way the items are displayed or to the cognitive impairment per se (visual agnosia) (Boudet et al. 2011).

Regarding the lady who woke up during the "Quizz"; would it be due to the related characteristics of both types of exercise or was it due to her circadian rhythms.

The instant stop of the interactions at the end of the session is proving the stimulation effect of Mémoire-red™ used by the facilitator. But it may also be a limit to the tool. A long term study of the effects would be required to see if the communication level between residents would be improved, on average, outside the sessions.

To our knowledge, no study has addressed specially the task of the facilitator in how the interaction with participants developed (Woods et al. 2012). This preliminary case study lends us to study a cognitive stimulation tool for nursing home residents as a global service embracing the role of the facilitator. Many of the questions we asked could find an answer if we could study more likened cases with different facilitators.

## CONCLUSION

This preliminary study could show that this generic tool used by a facilitator is fostering social participation and interactions between the residents. In this case study, there is an obvious co-construction of the cognitive stimulation between the facilitator, the participants and Mémoire-red™. We would like to confirm those first results and address the issues we raised in other action-research contexts (other facilitators, same facilitator with different levels of difficulty, other groups with different cognitive impairment stages).

## REFERENCES

- Boudet, B., Lefèvre, M., Rumeau, P., Savoldelli, M., Nourhashemi, F., Vigouroux, N., Résultats d'un test visuo-gnosique: modèle de prédiction du niveau d'atteinte cognitive d'une personne âgée ? (regular paper). In : Conférence Internationale sur l'accessibilité et les systèmes de suppléance aux personnes en situations de handicaps (ASSISTH 2011), CNRS Paris, 19/01/2011-21/01/2011, Nadine Vigouroux, Frédéric Vella, Guillaume Lepicard (Eds.), IRIT Press, (electronic support), 2011. <http://gerontech-lagrange.com/Images/article-Blandine-final.pdf>
- Cohene, T., Baecker, R. and Marziali, E. Designing Interactive Life Story Multimedia for a Family Affected by Alzheimer's Disease: A Case Study in CHI 2005 Proceedings | Late Breaking Results: Posters April 2-7 | Portland, Oregon, USA, p. 1300-1304.
- Cosley, D., Akey, K., Alson, B., Baxter, J., Broomfield, M., Lee, S., Sarabu, C. Using Technologies to Support Reminiscence In: Proceedings of the 23rd British HCI Group Annual Conference on People and Computers: Celebrating People and Technology, *British Computer Society*. 2009, p. 480-484.
- Damianakis, T., Crete-Nishihata, M., Smith, K. L., Baecker, R. M. and Marziali, E. The Psychosocial Impacts of Multimedia Biographies on Persons With Cognitive Impairments, *The Gerontologist* 2010;50(1):23-35.
- Lee, M. L., and Dey, A. K., in Proceedings of ASSETS'07, October 15-17, 2007, Tempe, Arizona, USA, p. 131-138. Copyright 2007 ACM 978-1-59593-573-1/07/0010.
- Sellen, A., Fogg, M., Aitken, S., Hodges, C., Rother and Wood, K. Do Life-Logging Technologies Support Memory for the Past? An Experimental Study Using SenseCam in CHI 2007 Proceedings, *Capturing Life Experiences*, April 28-May 3, 2007, San Jose, CA, USA, p. 81-90.
- Tarraga, L., Boada, M., Modinos, G., Espinosa, A., Diego, S., Morera, A., Guitart, M., Balcells, J., Lopez, O. L., Becker, J. T. A randomised pilot study to assess the efficacy of an interactive, multimedia tool of cognitive stimulation in Alzheimer's disease, *J Neurol Neurosurg Psychiatry* 2006;77:1116-1121.

Woods, B., Aguirre, E., Spector, A. E., Orrell, M. Cognitive stimulation to improve cognitive functioning in people with dementia, *Cochrane Database of Systematic Reviews* 2012, Issue 2. Art. No.: CD005562.