

## **Information for goal setting: use of a passive digital camera (SenseCam)**

### **Introduction**

In order to work with a person with aphasia to produce appropriate goals, we need to establish language status AND communicative needs. Understanding communicative needs depends on knowing the extent to which the person is able to participate, and the environment in which communication takes place (Kagan et al, 2008). Of course, if someone is language impaired, paradoxically it will be difficult for them to describe their communicative experience outside the clinic.

Traditionally, in order to get such information we use diaries (eg SNAP, Code, 2003) or conventional cameras. However both require the person with aphasia to select activities so it is not possible to get a holistic representation of the communicative context.

There are few studies of photography as an aid to interviewing in health research. Collier (1957) carried out a study on the mental health of an immigrant population in Bristol. He found that using photographs when interviewing provided greater depth and specificity. A review by Hurworth et al (2005) suggests that a potential use of photography is in 'participatory needs assessment'. Levin (2007) designed a photography class for people with aphasia to facilitate 'communication, self-expression and empowerment'.

### **The SenseCam**

Using a passive camera such as the SenseCam means the wearer does not take the pictures; they wear it around their neck, and all they have to do is turn it on. A picture is initiated when a change is detected by the camera's sensors. The change can be in heat, light or motion. The camera has a wide angle lens and takes a picture of the scene in front of the wearer. That is, a visual record of the user's environment is acquired without any action on the user's part. By their nature these cameras afford data gathering that presents the systematic, continuous and objective point of view of the wearer.

### **Method**

Participants were shown how to use the SenseCam and were instructed to wear it for 7 days for all the time they were dressed. During this time participants were also asked to keep a diary (1 page). After 7 days the cameras were picked up and the images loaded onto a computer. The microsoft software enables one to scroll through the images and also mark single images for printing. Software provided by Dublin City University automatically sorts images into 'events'

The participants came into clinic approximately one week later. They were interviewed about the week in question first using the diary and then the SenseCam images.

### **Participants**

Data from two participants are reported. Participants were at least two years post stroke and they provided a strong contrast in terms of the severity of their aphasia. Leo, 64, is a retired music teacher and lives alone. He has a slight aphasic impairment

and mild dysarthria. Dee, 61, is a retired aircraft mechanic and lives with his wife. He has a severe right hemiplegia and uses a wheelchair. He has poor language comprehension and very little intelligible speech output.

## **Results**

### **Conversations for goal setting.**

Both participants were able to use the SenseCam. Leo filled in the diary himself; Dee's wife filled in the diary for him. The conversation produced going through the diary and using the SenseCam Pictures were transcribed just for the first day of use. Since the pictures were used after the diary, it was in effect to see what extra information would be elicited from use of the pictures.

### **Leo**

For Leo, nearly twice as many events were recalled using the SenseCam pictures (21 versus 12). In terms of being able to use the given information for goal setting, the discussion using the diary suggested that Leo was already leading an active life, it was not quite clear how much Leo actually engaged in conversations with people he interacted with, and Leo's conversation partners needed to be trained to slow down when speaking to him. The SenseCam discussion clarified that he does chat briefly to people, for example in shops, but no longer goes to more social situations such as the pub. He finds talking tiring, especially by the end of the day. Although not attending therapy currently, he still does daily practice of work previously given to him, suggesting he is highly motivated for therapy. His greatest therapy need is for help with text reading. He is having some trouble working as far as he would expect and need a physiotherapy referral.

It can be seen that for Leo significantly more information, relevant to goal setting, is available using the SenseCam. This is despite the fact that Leo was only mildly aphasic and was able to take part in a detailed conversation.

### **Dee**

Because Dee had very little effective communication, neither interview (diary or SenseCam) were a good basis for goal-setting. Conversation using the diary information was difficult because of Dee's impaired conversation and very little definite information was collected (Appendix 1). While still limited, when using the SenseCam images, Dee was engaged with the pictures and they seemed to aid his comprehension and because therapist and Dee were looking at the same picture the conversational target was known to both (Appendix 2).

### **Analysis of SenseCam images**

One really striking thing about the SenseCam images was that rather than interview the patient, we could just look at the activities captured by the SenseCam. We compared the activities captured by the SenseCam for Leo and Dee. Leo's list of activities for day 1 can be seen in Appendix 3. It can be seen that Leo engages in a number of activities during his day. In stark contrast, Dee's activities

(see below) are severely constrained. It should be noted that for the two days this constitutes Dee's entire level of activity for the whole time he is out of bed. The information gleaned from this analysis clearly demonstrates that Dee's relatives need to be trained in how to use supported conversation with him, and that he would hugely benefit from an aphasia visiting scheme or attendance at a day centre.

**Dee's activities:**

Dee spends much of his day in his sitting room which has a sofa with a small table, a bed and a TV. The TV is turned on all the time the camera is recording.

Day 3

- 1.00 Dee's wife brings him lunch. She adjusts the TV.
- 4.00 Dee's wife comes in speaking on the phone. She adjusts the TV.
- 5.00 Dee's wife brings him dinner. His granddaughter visits briefly
- 5.30 Dee's wife brings him a mug of tea.
- 5.45 Camera is switched off.

Day 4

- 11.45 Dee is seated in a car. His daughter is driving. They go to a shopping mall. Dee is assisted into his wheelchair and is pushed around the shop. Back into car and back to house.
- 1.00 Arrive home and Dee sits on sofa.
- Daughter and wife are in room and a conversation takes place for a few minutes.
- Wife appears briefly. Dee strokes their cat.
- 1.30 wife brings lunch and sits beside him briefly.
- 3.45 wife brings Dee a foot pump. After 4 minutes he gives it back, wife leaves. Cat sits on Dee's lap.

## **References**

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## **Appendix 1**

### **Example of conversation with Dee using diary:**

Was your wife pleased with the floors?

*No*

Was there something wrong with them?

*She was she was I*

Was she disappointed?

*No no*

No, she liked them?

*Yes*

So she was pleased with them?

*Yes*

## **Appendix 2**

### **Example of conversation with Dee using SenseCam pictures:**

Who's that

(points to picture of daughter) *unin*

It's your d-

*Daughter*

What's she doing?

*I don't know*

What's she got there do you think?

*Unin*

It's her mobile phone

*Aye aye*

Is it an I-Pod?

*I-Pod*

Her I-Pod – does it drive you mad?

*Yeah*

### **Appendix 3**

#### **Leo's activities for day 1:**

9.30 At seaside cottage

Loads lawnmower and strimmer into car

Packs, Hoovers and packs a box of food

10.00 Drives off

11.00 Reaches daughter's home

Spends 10 minutes talking on mobile

Leaves lawnmower and strimmer with young man with whom he converses

11.25 Drives off

11.40 Arrives back at his apartment

Does chores and makes a drink

12.30 Buys food from the shops, returns and has lunch

After lunch hangs out washing, then watches TV

Drives to garden shop, looks at new mowers and comes away with a brochure

3.12 Back at the apartment looks at mower brochure

4.40 Daughter arrives, they converse over tea

5.16 Daughter leaves, Leo watches evening news, does some ironing and then reads