Supplemental Material 2

Wall text from the exhibition *Amnesia Lab*, 2014 UNSW Galleries, Sydney

Signage placed at entrance to EEG Sound Installation

The past existing as a space you can't enter or feel - the future a space you can't imagine.

Claire

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EEG Sound installation
a work in progress by Shona Illingworth
Sound Design Charlie Fleming, University of Kent

EEG study directed by Catherine Loveday
with Corinna Haenschel and Maclej Kosilo
undertaken at the Cognitive Neuroscience Research Unit, City University, London

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Claire, a former nurse in her early 50s, suffered a severe case of viral encephalitis at the age of 44, leaving her with significant damage to the right side of her brain.

Claire has a profound amnesia for the period of her 20s, 30s, and early 40s, to the extent that she is unable to recall any episodic details about the birth or development of any of her children. In addition she demonstrates a significant level of amnesia for her childhood and adolescence. Formal assessment reveals a relatively intact personal semantic memory for all periods but significantly impaired memory for specific autobiographical/episodic memories at all ages.

Claire's family describes her autobiographical memory as a locked vault that can be opened but only through prompting with very specific triggers. Images from SenseCam (the automatic camera she wears around her neck) often provide such cues and, when they do, 'forgotten' memories come to mind in 'Proustian moments' of remembering. A Proustian moment is a moment of intense recollection when images of the past flood into consciousness, and the rememberer has a powerful experience of recollection.

Adapted from "Using SenseCam with an amnesic patient: Accessing inaccessible everyday memories" by Catherine Loveday & Martin A. Conway.

Using data from an electroencephalogram (**EEG**) study of Claire viewing SenseCam, this work depicts the neurological landscape of amnesia and the sudden bursts of activity in the brain during Proustian moments of recollection cued by Sensecam.

EEG measures the electrical activity of the brain, via electrodes applied to the

scalp. Here, the waveforms of neural firing output from the EEG have been transformed into sound – the 32 channels corresponding to 64 electrodes placed on key parts of the scalp. EEG allows the mapping of the memory construction process in real time as this unfolds typically over a period of seconds (a lengthy time in cognition).

The EEG study took place in London in August 2014 as a pilot for a larger study by Conway and Loveday, investigating the pattern of neural firing that occurs when SenseCam pictures trigger memories. During the study, Claire viewed SenseCam images taken on the remote island of St Kilda, Outer Hebrides in June 2014. Claire travelled to St Kilda with Loveday and Bennett on a research trip led by Illingworth as part of *Lesions in the Landscape: Claire and the Island of Hirta*, a project supported by a Large Arts Award from the Wellcome Trust, UK. Illingworth's video installation resulting from this project will be produced and exhibited by FACT, Liverpool in 2015 and UNSW Galleries in 2016.