ALZHEIMER'S IN ART

Megan Griffiths

MEMORY

My early research focused on memory and how Alzheimer's disease affects memory, both physically, in the changes to brain structure, and at a personal level, in terms of how those physical changes in the brain manifest themselves in the behaviour of memories in people with Alzheimer's. The starting point of my research was on how memory works.

For many years, the concept of memory function was considered to be like that of a filing cabinet. New ideas were indexed and filed then recalled when necessary and, eventually, when the cabinet was full, removed (forgotten) to make room for new ones.

The ability to look inside the body with new types of scans, such as CAT (computed tomography), MRI (magnetic resonance imaging) and PET (positron emission tomography), has enabled doctors and researchers to view the brain while a patient is actually doing or thinking something specific – which in turn has led to a whole new way of looking at memory and the brain.

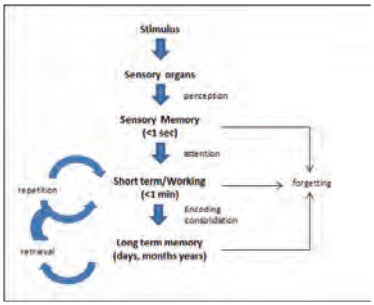

Figure 1. Diagram of how memory works, Megan Griffiths.

How do we remember? Remembering is a very complex procedure, which will only be touched on in this article.[1] A psychological account of the basic formation of memories is outlined in figure 1.

Sensory memory is the memory we pick up from our perceptions, and usually lasts less than a second. There are two sub-memory types – iconic for sight and echoic for sound.[2]

Short-term memory lasts about one minute and lets you keep a piece of information to retrieve in this time. This kind of memory lets us remember a phone number long enough for us to make a phone call, or put an item on a shopping list.[3]

Working memory is a newer concept, and is used to do tasks where the memories of individual actions may be stored in different parts of the brain. An example of this is driving a car.[4] Long-term memory is made up of several different types of memory. The newer a memory, the more flimsy it is. To produce a long-term memory, each memory must go through three processes. The first is encoding, which assigns indexes to a word (for example, a needle might be sharp, metal, sewing equipment). These indexes help us to retrieve a word, even if at first glance we don't remember the word 'needle.'[5] The second process is storage, which can be regarded as the active process of consolidation that makes memories less vulnerable to being forgotten. It is this consolidation that differentiates memories of recent facts from memories of older ones. Finally, retrieval of memories involves the active mechanisms that make use of encoding indexes. The more a memory is used, the easier it is to recall it. Forgetting can be caused by disruption to any of the three processes that a new memory needs to go through.[6]

ALZHEIMER'S DISEASE

When a person starts showing signs of having Alzheimer's disease, the first outward signs are often problems with memory or thinking that are serious enough to interfere with the person's lifestyle.[7]

According to David Snowden, author of *Aging with Grace: What the Nun Study Teaches us about Leading Longer, Healthier, and More Meaningful Lives*, autopsies done on brains of people as young as 20 by German researchers Heiko and Eva Braak sometimes showed physical changes to the brain that suggest that they already had the beginnings of Alzheimer's.[8] Alzheimer's disease typically affects the brain by causing plaques and fibrous tangles to build up, causing disruption to the neurons carrying signals around the brain.[9] These tangles start in the entorhinal cortex, a part of the brain that is important for memory, and then move into the hippocampus, which is also important for learning and memory functions, and finally to the neocortex. This part of the brain gives us our ability to sense time, control impulse and use language. The Braaks believe that it could be up to 50 years between the appearance of the first neurofibrillary tangles and the final stage of the disease.[10]

Snowden's research, with the School Sisters of Notre Dame, has also made some interesting discoveries, contrasting the ability of subjects to use language descriptively at an early age and how badly Alzheimer's affects them later on. For example, two nuns of the same age and education and growing up in the same environment, may show different signs of the disease – one with minor and the other with major disability. However, brain autopsy after death may show that both had the same amount of physical damage in the brain. The nun who was shown to have used language more descriptively early in life is described as having greater resilience – a stronger brain that was more efficient and more flexible, and therefore able to make compensations as cells died.[11]

Translated into plain English – as Alzheimer's disease progresses, the brain shrinks and fibrous tangles move through the brain, breaking off connections and killing cells. While there is no magic medication to either stop this process or relink cells, some people seem to have more immunity than others in terms of how long it takes the disease to affect them.

MY BEGINNINGS

The start of my degree at the Dunedin School of Art coincided with my return to Dunedin after 12 years' absence to look after my father who had just been diagnosed with Alzheimer's and dementia. I enrolled in the BVA course as something to do while caring for him long-term, but after only 18 months he died. It left me pondering on his life with Alzheimer's. This was at the start of my second semester, in year two, leaving me not only to complete my practical work for the end-of-year assessment, but also to sort, tidy and sell the family home.

Figure 2. Megan Griffiths, *Obsession*, 2014, cotton fabric, thread, photograph: Megan Griffiths.

Figure 3. Close up of *Obsession.*

Obsession (2014), my final second-year work, was based on the concept of a collection. Not the usual items people collect, such as stamps or china, but the *Cordyline australis* leaves that my father collected from the family cabbage tree over a period of a couple of years when he had dementia. These he meticulously collected, bundled together, dated and noted on his computer, along with such information as how many leaves were collected and what the weather was like. The work is made up of 322 leaves, each one individually made of cotton fabric, and then sewn with a variety of threads to create markings, chemically burned to create holes and then stiffened. The leaves were then bundled up and tagged before being hung.

I hoped the viewer would gain some understanding of people with Alzheimer's disease – the value placed on something as inconsequential as cabbage tree leaves, and the absolute obsession with collecting and cataloguing them that shows a near madness of purpose.

The following year I continued looking at other aspects of Alzheimer's disease. This time my project explored the inexorable decline of memory and other abilities in people facing Alzheimer's disease. Although the works *Who am I?* and *Where am I?*, which make up this project are personal, they each reach out to a wider audience, many of whom will know someone with this condition.

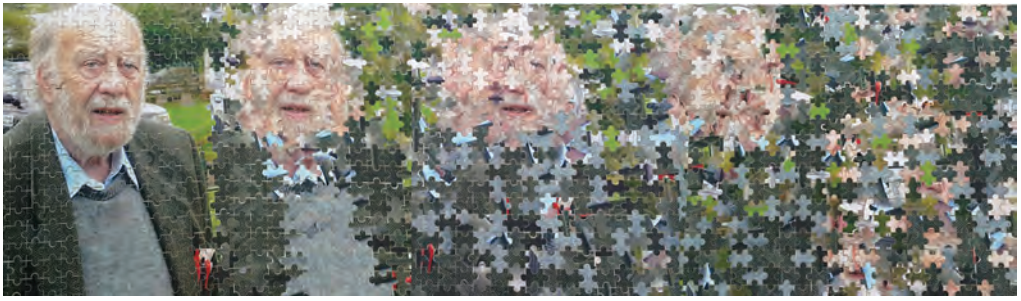

Figure 4. Megan Griffiths, *Who am I?* (2015), synthetic fabric, acrylic, photograph: Megan Griffiths.

In *Who am I?*, a jigsaw has been used as an analogy for declining recognition and decreasing abilities – the reality of physically being unable to put a jigsaw together as the disease progresses. The jigsaw idea was 'happenstance.' A friend showed me a quilt made up of fabric jigsaw pieces, and I suddenly saw how this could be used as a metaphor for Alzheimer's disease. This piece is made from images printed onto synthetic fabric, glued onto acrylic and laser cut into identically shaped jigsaw pieces. The jigsaw is made up of five identical puzzles, with only one retaining the original image. The other four become increasingly distorted until the picture is no longer recognisable. The work consists of 1235 individual pieces.

Figure 5. Megan Griffiths, *Where am I?* 2015, London, synthetic fabric, polyester batting, photograph: Megan Griffiths.

Where am I? is made up of three separate pieces. Each is an A0-sized whole-cloth quilt, using the image from the previous piece on the front and a map image on the reverse. The map images depict three cities – Invercargill, Dunedin and London. The maps were enlarged and printed onto synthetic fabric. Once quilted, the area between the streets has been cut away, leaving a sparse network of lines and glimpses of the original image. This piece addresses the decline of the sufferer – not in terms of, say, "which building am I in right now?" but rather "which city am I living in?" It has deliberately been hung in such a way that declining memory has been shown in terms of increasingly large holes, but also each piece in the sequence is less stable than the one before it.

ARTISTS AND MEMORY

After looking at memory, the brain and how it is affected by Alzheimer's disease, I researched a variety of artists. I looked at artists working in the field of memory, memory loss and Alzheimer's disease, as well as works that used an interesting technique or idea worth experimenting with such as photo transfers onto sheer fabric, or incorporating maps in such a way as to reference memories or the body.

My work is situated amongst that of conceptual artists, where the idea or concept is the real art, and art is designed to engage the mind of the viewer rather than the vision or emotions.[12] Greg Minissale comments that there are two kinds of concepts. Using 'cat' as an example, a concrete concept might express itself as cat, lion, tiger, etc., while an abstract concept might be soft, predator or king of the animals. Some artworks will require both concrete and abstract concepts to be understood.[13]

SCIENCE/ART COLLABORATION

Anne Griffiths, an English textile artist, has designed a set of pieces for Diamond Light Source, the UK's national synchrotron science facility. Funded by the Wellcome Trust, and called *Designs for Life*, the works were made by the Oxfordshire Woman's Institute in 2006. These works portray how diseases look at a microscopic level. Amongst other elements, Griffiths has taken a copy of a brain scan and a close-up of neurofibrillary tangles and designed them to be reproduced as textile art. Her work for this commission was only made possible using technology that did not become available until the 1970s when CT scanners started to be used and modern electron microscope came into use. In her artist statement, Griffiths says: "I specialize in working with transparent materials, embellished with machine stitch and paint, sometimes combined with heavier materials, such as acrylic or metal to create durable pieces. My starting points are often a word or quotation that demands visual representation."[14]

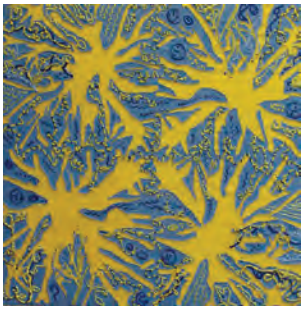

Figure 6. Anne Griffiths, *Tangles*, 2006, fabric, thread, 50cm X 50cm, Diamond Light Source, image courtesy of the artist.

Over the last several years, the Dunedin School of Art has embarked on successful collaborations between scientists at the University of Otago and a variety of artists. In 2013 this collaboration was arranged with neuroscientists from the Brain Health Research Centre at the University of Otago. The resulting exhibition featured 15 works from collaborations between 15 artists and 17 scientists.[15] Of these, three works directly related to Alzheimer's disease – although not necessarily the aspect of memory – and two others dealt with memory specifically, although not in relation to Alzheimer's disease. I looked at the work of three of these artists.

Neuroscientist Valerie Tan's project aims to prevent the onset of Alzheimer's disease by using a virus injection to transport proteins to the brain.[16] In response, artist Richard Mountain used a blown-up image of a virus (similar to those used by Anne Griffiths) to create an oversized ceramic virus.

Neuroscientist Margaret Ryan's research is focused on how memory loss occurs in Alzheimer's disease, particularly in the hippocampus region of the brain. Artist Becky Cameron started her project with a discussion about memory and loss, and about how the loss of memory affects how we see the world. This started her thinking about gene mapping and how our personal environments are mapped.[17] Her final piece for the project was a lantern which referenced early 'magic lanterns.' The use of movement, light and cut-out forms provide visual paths and suggest transient memories.

The final artwork I want to look at from this exhibition is the result of a collaboration between neuroscientist Lucia Schoderböck and artist Sue Novell. Schoderböck, who specialises in learning and memory at the molecular

and cellular levels, studies the development of new neurons in adult brains to discover their role in memory function and retrieval. Novell's work merges a significant scene from her life with a pixellated photograph of memory cells.[18] Looking at this work gives the viewer a distinct feeling of seeing a picture that is 'not quite all there' or is out of focus. Of all the artworks in the 2013 exhibition, this is the one that resonates most with me in considering memory and memory loss.

THE PHENOMENOLOGY OF ALZHEIMER'S DISEASE

The next two artists I want to consider have made works that are very personal representations of their reaction to losing a parent to Alzheimer's disease, and dealing with the aftermath.

Fibre artist Lisa Kokin lost her mother to dementia. The next day she started sewing. The result was an 18-piece exhibition called "Raveling."[19] Some pieces are based on the words her mother said in the last days before she died – "Take me home, now." In her interview with Vicki Larson, Kokin said: "I hope it functions both on an aesthetic level, that people are intrigued by the material and the use of color, but also my work always includes content."[20] All 18 pieces were created using thread on stabiliser. All are based on memories or pictures, and conversations with her mother. The words "Take me home now" have been sewn into a round LP shape as if they were the grooves in a record.[21]

Photographer Lief Anson Wallace made a series of eight black-and-white photographs called *Alzheimer's Fragments of Memory*. "This project was born out of my need to understand and cope with my mother's Alzheimer's. … I feel that our lives *are* our memories; what we did yesterday, what we are doing today and what we may do tomorrow. My mother, Helen's, life was encompassed only in the immediate. The subjects in the photographs represent her life in the immediate, the darkness represents her memory and is also left for the viewer to complete with their own memories."[22]

Figure 7. Becky Cameron, *Locus Lucidus* 2013, fire retardant paper, aluminium from drink cans, light bulb, found stand, wire and tracing paper. Dimensions of lamp: 540mm x 200mm. image courtesy of the artist.

Figure 8. Sue Novell, *This Painting is about Memories*, 2013, image courtesy of the artist.

Figure 9. Lisa Kokin, Record *(Is It Tomorrow?)*, 2012, thread, 22.5" x 22", photograph: Lia Roozendaal Photography, lisakokin.com

MEMORY AS A SUBJECT

The last three artists I want to look at have all used memory or memories in some way in their art.

Figure 10. Leif Anson Wallace, *Alzheimer's Fragments of memory#1*, black & white photograph, image courtesy of the artist.

In Nina Katchadourian's work, I see a way to use maps as an analogy for the brain – using a map as a design for the inner connections of neurons in the brain, but also using the idea of cut-up or disrupted maps to show how the connections can be damaged. Katchadourian has used maps in many of her works. Some have been cut up and repasted to give the world a new look, but several of them consist of road maps, cut out so only roads remain. Her fascination with the links between the geographical and the anatomical shows up in several of her works. In her 1997 work, *Austria*, a cut-up map has been shaped into a heart to suggest the way that Austria has traditionally described itself as "the heart of Europe."[23]

Figure 11. Nina Katchadourian, *Austria*, 1997, dissected paper map, 6" X 9", image courtesy of the artist.

Film, video and installation artist Kerry Tribe has created several film and video works that deal with memory and forgetting. One of her works deals with the true story of "HM," a patient who had experimental surgery in 1953 and, as a result, while remembering things before the operation, had no new memories lasting more than 20 seconds.[24] This work consists of a single 16mm film playing through two adjacent synchronised projectors, with a 20-second delay between them. This gives viewers a sensation of mnemonic dissonance as they view two different parts of the same reel of film at the same time.[25] While the work contains an acted interview (i.e. the interviewee is not the real HM), it is so well constructed that until we are told the circumstances, most viewers would not realise that it was not a genuine interview.

Christian Boltanski's 1994 work *Menschlich* ("Human") refers to the Holocaust. He used 1200 photographs from portrait installations created between 1970 and 1994 and hung them in the Kunstmuseum Wolfsburg. In 2013, almost 20 years later, he took 200 of those photographs and transferred them onto large, 2m pieces of sheer fabric to make a new installation in the Kunstmuseum Wolfsburg called *Spirit(s)*, one of three new works he created for the museum. His photographs are usually "found" images, with Boltanski having no idea of the identities of the people in them. In an interview with Markus Bruderlin, he commented that if the fabric pictures wear out, then new ones can be created using any pictures. For him it is the *concept* that is important, not the actual pictures used. [26] His copying and digital recopying of the photographs he uses gives them an old, grainy appearance, even if they are relatively modern images. The ability to enlarge photographs and print them on fabric to such a large size has also only been made possible in this digital age. This work produces a sensation of fading or forgetting – almost a ghostly effect as the images move softly in the draughts wafting through the gallery.

CONCLUSION

My latest works have drawn elements from the artists discussed above that to me best describe the way in which my father's disease progressed. Two of these works are based on specific events: *Obsession* reflects my bewilderment at his insistence that cabbage tree leaves were valuable for use in floral art, not just as fire starters, while *Where am I?* was based on a conversation I had with him, when he asked if I could take him to visit his childhood home in Invercargill. When I agreed to his request, but said that it was a bit late in the day to make the six-hour round trip, he just looked at me and said, "Aren't we in Invercargill?" The last of these three pieces, *Who am I?*, embodies my perception of him 'losing himself' over a period of 18 months or so, going from the father I knew and loved to a virtual stranger who had the ability to both infuriate and scare me.

While images representing Alzheimer's disease and dementia in art are still relatively rare, the increasing prevalence of both these conditions in the world's aging population will undoubtedly mean that, over time, more artists will be seeking ways of representing these two devastating diseases in art.

In 2016, **Megan Griffiths** graduated from the Dunedin School of Art with an Honours degree in visual arts (textiles). This was the cumulation of more than 30 years of working in textiles, starting with embroidery, then patchwork and moving into fibre art. Megan continues to work with these techniques and uses her art school knowledge to create unique pieces of fibre art.

1 Bruno Dubuc, "The Brain from Top to Bottom, Institute of Neurosciences, Mental Health and Addiction", January 2002, http://thebrain.mcgill.ca/. (= *Le Cerveau à Tous Les Niveaux, trans. Al Daigen*) (accessed 27 April. 2015).

2 Ibid.

3 Ibid.

4 Ibid.

5 Ibid.

6 Ibid.

7 Alzheimer's Association of America, "Inside the Brain: An Interactive Tour," http://www.alz.org/alzheimers_disease_4719.asp, slide 15.

8 David Snowdon, *Aging with Grace: What the Nun Study Teaches us about Leading Longer, Healthier, and More Meaningful Lives* (New York: Bantam, 2001), 91.

9 "Inside the Brain: An Interactive Tour," slides 9 and 13.

10 Snowdon, *Aging with Grace*, 91-2.

11 Ibid., 45.

12 Amy Dempsey, *Styles, Schools and Movements: The Essential Encyclopaedic Guide to Modern Art* (London: Thames & Hudson, 2004), 240.

13 Gregory Minissale, *The Psychology of Contemporary Art* (Cambridge: Cambridge University Press, 2013), 6.

14 http://www.pocketmouse.co.uk/biography.php.

15 Sunkita Howard and Jenny Rock, "Seeing Science 'Through New Eyes' in an Art and Neuroscience Collaboration," *Scope: Art & Design 9* (November 2014), 104-7.

16 Valerie Tan and Richard Mountain, "Virus #72," *Scope: Art & Design 9* (November 2014), 118-119.

17 Margaret Ryan and Rebecca Cameron, "Locus Lucidus," *Scope: Art & Design 9* (November 2014), 124-5.

18 Lucia Schoderböck and Sue Novell, "This Painting is about Memories," *Scope: Art & Design 9* (November 2014), 120-121.

19 Lisa Kokin, pers. comm., 3 May 2017.

20 Vicki Larsen, "Artist Kokin's Mill Valley Exhibit Explores Memory, Loss and Connection," Lifestyle Section, *Marin Independent Journal*, 10 April 2012, http://www.marinij.com/lifestyle/20121004/artist-kokins-mill-valley-exhibit-explores-memory-loss-and-connection (accessed 29 April 2015).

21 Maria Porges, *Lisa Kokin: Raveling*, exhibition organized by Seager Gray Gallery, Mill Valley, CA, 2-31 October 2012, http://www.lisakokin.com/pdfs/raveling-catalog.pdf (accessed 30 April 2015).

22 Lief A Wallace, pers. comm., 8 May 2015. See also Lluvia Rudea and Lief Wallace, "Lief Anson Wallace: Fine Art Photography, CV/Bio," http://www.liefwallace.com/mbr_bio.php (accessed 29 April 2015).

23 Katharine A Harmon, *You Are Here: Personal Geographies and Other Maps of the Imagination* (New York: Princeton Architectural, 2004), 78-9.

24 Cary Levine, "Kerry Tribe, Bio," http://www.kerrytribe.com/bio (accessed 29 April 2015). See also Michael E Hasselmo, *How We Remember: Brain Mechanisms of Episodic Memory* (Cambridge: MIT, 2012), 9-10.

25 Kerry Tribe, *HM*, 2009, two-channel 16mm film, 19:10min, https://vimeo.com/61766094 (accessed 29 April 2015).

26 "Christian Boltanski – Moved," *HUMA3 Archive*, http://www.huma3.com/huma3-eng-reviews-id-867.html (accessed 30 April 2015). See also *Christian Boltanski – Moved*, 2013, https://www.youtube.com/watch?v=RbIxk96HsTY (accessed 29 April 2015). Interview with Markus Bruderlin, Kunstmuseum Wolfsburg.