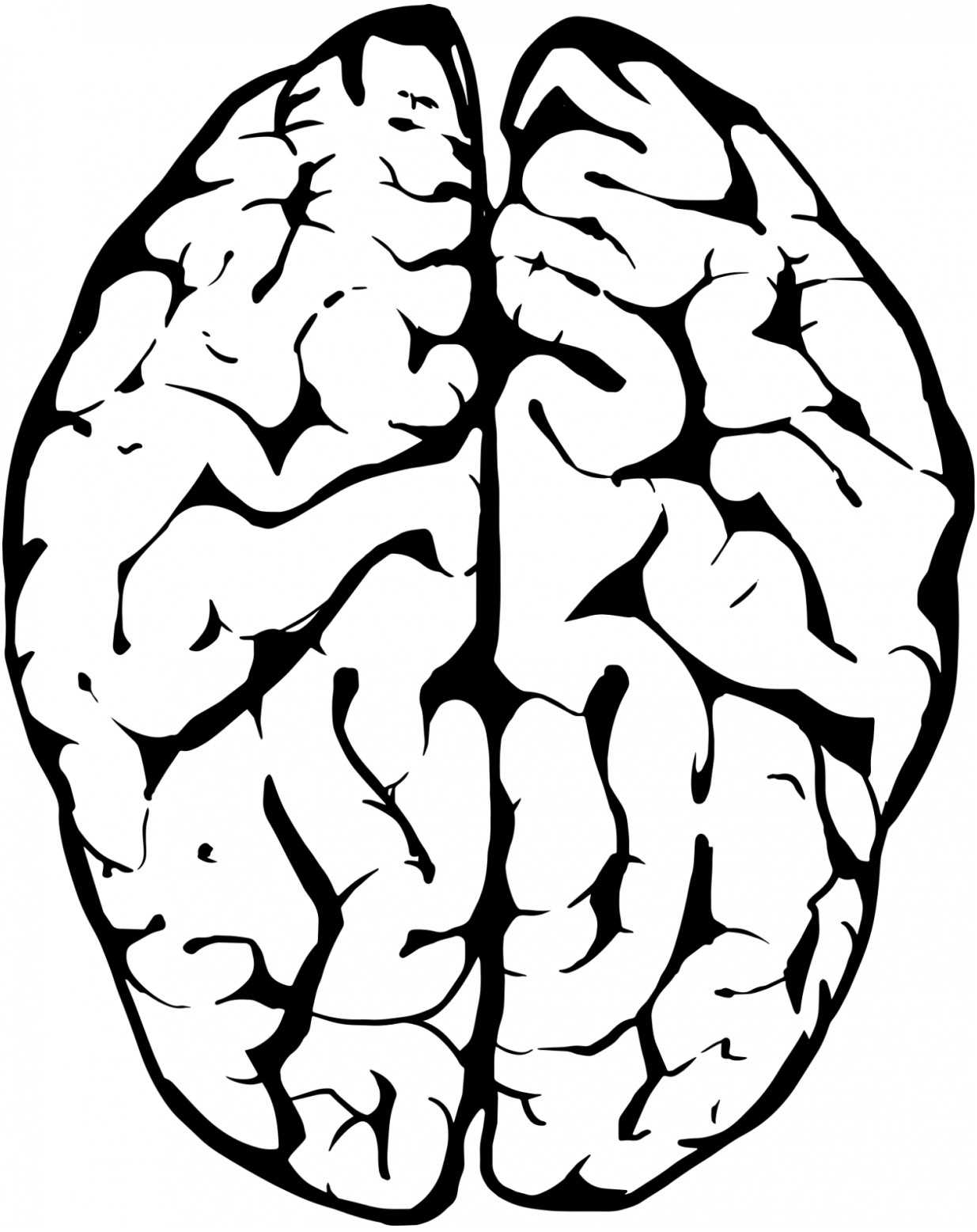
Forgotten memories may be retrievable

August 8 2017, by Thomas Deane



Credit: CC0 Public Domain

Do you remember taking your very first step, or enjoying your second birthday party? Probably not, but that probably won't seem weird to you because we have become conditioned to accept infantile amnesia as a fact of life.

However, we are all considerably more concerned by adult amnesia, which is something that over 33 percent of us will experience over the course of our lives. This may be mediated through aging, disease, misadventure, or be imparted by other routes.

Our memories – though hard to define or explain to others – help to make us who we are. Experience shapes us, helping us to learn and develop. This is why dementia and amnesia can be so debilitating for those who live with either.

The common perception has generally been to equate memories with pages that fill an ever-growing book with the tales each and every one of us pen as we do the walk of life. Once a page is burned, or torn out – we were told – the memories contained within were lost forever.

Yet that isn't the case. The real picture is far more positive, according to Assistant Professor in Trinity's School of Biochemistry and Immunology, Tomás Ryan, who delivered the below TEDMED talk on this very topic last year.

Professor Ryan's work in memory and the neuro-architecture involved in mice suggests that memories remain intact and seem to be retrievable. Memory loss seems to occur when the access mechanisms fail but there are ways to reboot the system as each 'memory engram'—related to a host of connected cells in the brain—can be stimulated if you know how.

Professor Ryan said: "It's as if the book and the pages in it have not been burned at all, but that they have instead been left on a shelf in the library

that has been forgotten about."

"We showed in mice that we could access memories by stimulating the cells that held them following periods of amnesia. It also worked in mice that were living with early Alzheimer's disease. All this suggests that the physical data of the memories are still there in the brain. You just need to know how to access them."

While we are still a long way away from solving memory loss in humans, this scientific development is hugely positive.

It may mean that we can one day help those with memory loss regain their sense of self and live more normal lives, or – because memories can and do evolve over time—even help us mutate painful memories that we associate with certain things into happier ones.

Provided by Trinity College Dublin

Citation: Forgotten memories may be retrievable (2017, August 8) retrieved 25 April 2024 from https://medicalxpress.com/news/2017-08-forgotten-memories.html