

[nature.com](#)[Publications A-Z index](#)Search   [Advanced search](#)[Browse by subject](#)[E-alert sign up](#)[RSS feed](#)[Subscribe](#)[My account](#)[Login](#)

[nature news home](#) [news archive](#) [specials](#) [opinion](#) [features](#) [news blog](#)  
[events blog](#) [nature journal](#)

[comments](#)  
[on this story](#)

Published online 4 January 2008 | Nature |  
 doi:10.1038/news.2008.408

[most recent](#)[commented](#)

Stories by  
 subject

[Health and  
 medicine](#)  
[Brain and  
 behaviour](#)

Stories by  
 keywords

[memory](#)  
[imagination](#)  
[ageing](#)

This article  
 elsewhere

[Blogs  
 linking to  
 this article](#)

[Add to  
 Connotea](#)

[Add to Digg](#)

[Add to Furl](#)

News

## Ageing makes the imagination wither

**Memory decline in old age may also mean a  
 less vivid imagination.**

Ker Than

Old age does more than stealthily steal away our most cherished memories: it also seems to diminish our ability to imagine things.

This finding, detailed in the January issue of the journal



[Ageing makes the  
 imagination wither](#)  
 04 January 2008

[The battle of the butterflies  
 and the ants](#)  
 03 January 2008

[Cheap drugs against  
 aggression don't work](#)  
 03 January 2008

[Time for doctors to unstrap  
 their watches?](#)  
 03 January 2008

[Drunken flies get  
 hypersexual](#)  
 03 January 2008

Related stories

[Memory shuts down as you  
 doze off](#)  
 08 October 2007

[Sleeping brain plays back  
 events in fast-forward](#)  
 15 November 2007

[Optimism brain regions  
 identified](#)  
 24 October 2007

[Add to  
Newsvine](#)

[Add to  
Del.icio.us](#)

Stitching together personal details gets harder as we get older. *GETTY*

*Psychological Science* <sup>1</sup>, supports the 'prospective brain' hypothesis, the idea that imagining the future and remembering the past rely on the same neural machinery.

"One implication of this study is that imagining is quite closely related to, and dependent on, remembering, perhaps more so than we previously realized," says Dan Schacter of Harvard University.

In the study, Schacter and his team asked groups of young and old participants, with average ages of 25 and 72, respectively, to recount a personal episode from their past or imagine a personal experience in their future in response to cue words.

Details in the participants' narratives were categorized as either 'internal' or 'external'. Internal memories are similar to scenes from a movie: they contain specific subjects and take place in particular settings and time periods. External memories consist mostly of general facts about the world, such as 'the sky is blue'.

As expected, results showed that the past accounts of the older participants' tales contained fewer, and less detailed, internal memories than those of the younger group. This deficit also extended to their future imaginings.

### **Imagine that**

A young participant asked to imagine a personal scene in response to the cue word 'engine', for example, might envisage themselves driving in a red convertible along California's Pacific Coast Highway one weekend over the summer. They might describe seagulls circling overhead, the feel of the wind mussing their hair, and the smell of the salt air as they round a particular corner.

In contrast, an older participant's response to the same cue word was: "The scene is I'm just driving along, in the Saab, and ... not worrying about

## Naturejobs

### **Associate Dean for Research**

Washington University in St. Louis  
St. Louis, MO 63110 United States

---

[More science jobs](#)

---

[Post a job for free](#)

## Resources

[Send to a Friend](#)

[Reprints & Permissions](#)

[RSS Feeds](#)

elsewhere on nature.com

[Nature Reviews Neuroscience paper](#)

## Key:

---

**content requires [subscription](#) or payment**

high energy costs ..."

It wasn't that the older group had trouble speaking or spoke less, the researchers found. The older people scored normally on verbal tests, and they talked at length about non-personal external memories.

Brian Levine, a neuroscientist at the University of Toronto in Canada, is convinced that the data show a real decline in personal future imaginings. "I think that methodologically they have ruled out the other possible explanations," Levine says. He adds that the findings are consistent with other studies examining future thinking in humans. "The more interesting question is 'why?'," he says.

### Scenic details

The researchers speculate that personal memories are particularly susceptible to ageing because they rely heavily on 'relational processing', the ability to mentally summon and join unique pieces of information, such as where and when an experience occurred. Stitching the particulars of a scene together — be it real or imagined — gets more difficult with age.

Over the past year, the prospective brain hypothesis has gained steady support among neuroscientists. An intriguing possibility raised by the hypothesis is that the primary role of human memory may not be to remember the past, but to imagine and prepare for the future.

"Once things in the past are finished, there's nothing you can do about them," Levine says.

### References

1. Addis, D.R. , Wong, A.T. & Schacter, D.L. *Psychological Science*. in press (2008).

### Comments

*Reader comments are usually moderated after posting. If you find something offensive or inappropriate, you can speed this process by clicking 'Report this comment' (or, if that doesn't work for you, email*

*redesign@nature.com*). For more controversial topics, we reserve the right to moderate before comments are published.

## Add your own comment

You can be as critical or controversial as you like, but please don't get personal or offensive, and do keep it brief. Remember this is for feedback and discussion - not for publishing papers, press releases or advertisements, for example.

You need to be registered with Nature to leave a comment. Please log in or register as a new user. You will be re-directed back to this page.

[Log in / register](#)

---

**Nature** ISSN 0028-0836 | EISSN 1476-4687

**About us** [About this site](#) [For librarians](#) [Contact NPG](#) [Naturejobs.com](#) [Privacy policy](#) [Legal notice](#) [Accessibility statement](#)  
[RSS web feeds](#) [Help](#)

© 2008 Nature Publishing Group – partner of **AGORA, HINARI, CrossRef and COUNTER**