

With Age Comes a Better Understanding of Social Signals

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Neuroscientists have discovered an unexpected benefit of getting older – a more nuanced understanding of social signals, such as the age of others.

In a new study published today (Friday 14 November) in the journal *Current Biology*, University of Glasgow researchers show that older people have richer mental representations of the ageing process.

A team from the university's Institute of Neuroscience and Psychology used computer-generated representations of faces to gain an insight into the mental representations of ageing in the minds of volunteers aged 18-25 and 56-75.

The two-part study first showed volunteers 4,000 computer-generated images of faces. The images used a base face, created by averaging 84 male and female faces, overlaid with varying layers of random patterns known as Gabor noise, which darkened and brightened certain areas of the face.

The volunteers were asked to pick, for example, the 'old' face from three simultaneously presented faces, with perceived age affected by factors such as darkened areas between the nose and mouth which could appear as wrinkles to the observer. Over the trials, the researchers were able to average the noise templates to visualise the information each participant uses to estimate old age. Other trials repeated the experiment with 'young' and 'middle-age' choices.

The second part of the study presented faces 'aged' using the templates to a separate group of volunteers and asked them to judge their perceived ages between 18 and 80. The results showed that younger people mentally split the faces between themselves (younger) and others (older), while the older volunteers more faithfully represented the features of young, middle and old age.

Dr Nicola van Rijsbergen, first author on the study, said: "Our research allows us to demonstrate the mental representations in the mind that predict age judgments. For example, both age groups associated old age with wrinkles from the corners of the nose to the mouth, but only older participants represented the left and right jowls in old age.

"It's difficult to say for sure exactly why this is happening, but one theory we have is that older people spend more time thinking about age than younger people do, which leads to a more nuanced mental representation of the ageing process.

"As a scientist, it's very exciting to be able to visualize what's going on in people's heads with techniques such as these. This process gives us the tools to get a much clearer perspective on mental representations of faces and there is much more we can learn from similar studies in the future.

"Perhaps businesses who require employees to carefully evaluate other people might consider the benefits of employing older people. It seems that, contrary to commonly-held prejudices, older people more accurately depict socially relevant information than their younger counterparts."

The research was supported by a grant from the Biotechnology and Biological Sciences Research Council (BBSRC). The paper, 'With age comes representational wisdom in social signals', is published in *Current Biology*.

Company Contact:

University of Glasgow

T. +44 (0)1413307126

E. nick.wade@glasgow.ac.uk ?

Additional Contact(s):

Nick Wade

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