

Appendix

Methodology for priming experiment (section 2.2)

Thirty-four participants between the ages of 65 and 90 were recruited for the study, and were told that they were helping with testing and feedback on some learning resources and games that were being developed.

BASE-LINE AND FOLLOW-UP

At the beginning and end of the day, all participants took a short term memory test, whereby successively longer sequences of letters are flashed briefly on a screen, and participants have to recall as many letters in the correct order as possible. A participant's score was recorded as the total number of correctly recalled letters in the right order.

PRIMING:

In between the baseline and follow-up measure, various techniques were used to prime the groups with different perceptions and expectations of older people and their memory ability. Immediately after taking the baseline memory test, the participants were split into two groups, one to be primed positively and the other negatively.

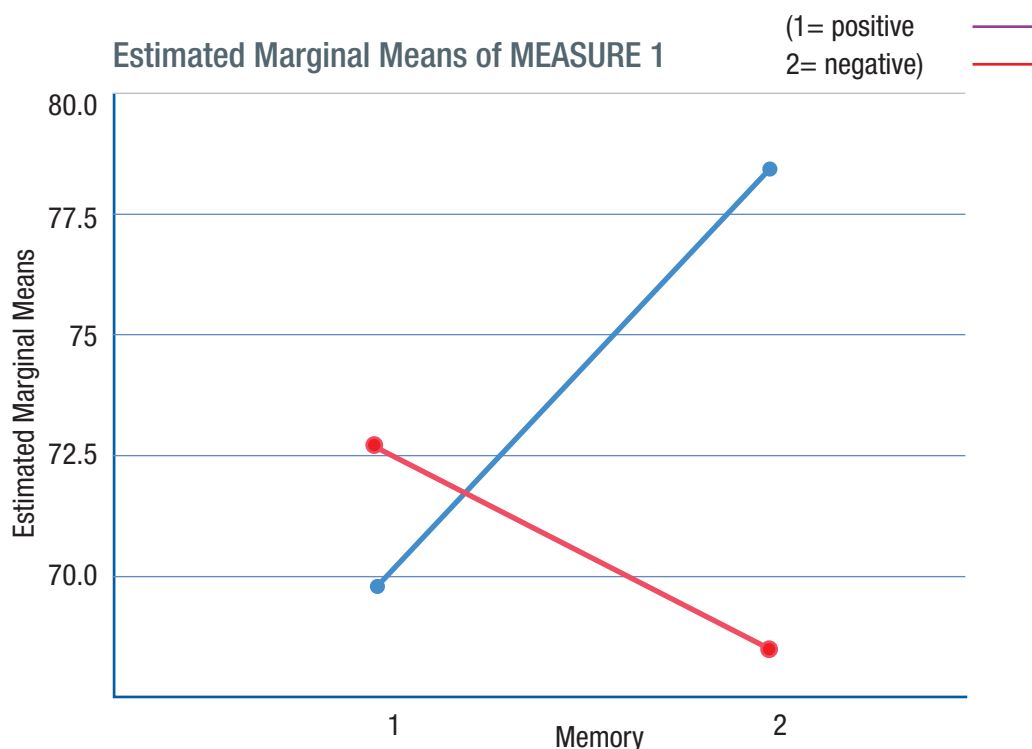
- **Prior task success priming.** One group was then told that they had scored better than the other half which was why they had been separated – even though they had performed only equally well on average. This is a form of priming known as ‘prior task success’, and a similar implementation has previously been shown to lead to more positive attitudes and better performance at subsequent cognitive tasks.¹ In this study, this priming principle was used in several activities, for example, through giving the negatively primed group cognitive tasks that would have a much lower success rate than the other group.
- **Scrambled sentence priming.** Participants also took a scrambled sentence test,² which challenged them to construct a sentence from a jumbled string of seemingly random words. Though presented as a language proficiency test, many of the words included were actually chosen to prime for different age stereotypes. For example, the negatively primed group were challenged to construct sentences using words such as *senile*, *confused*, *decrepit*, *forgetful* and *slow*; and the positively primed group had to do so using words such as *wise*, *accomplished*, *mature* and *learned*.³

Subsequent to the experiment, all participants were debriefed with a complete explanation of the tests and their purpose. Priming effects have been shown to be largely nullified when subjects are made cognisant of the attempt to prime, thus protecting the participants from any sustained consequences of the intervention. See Hess et al. (2004) *Explicit and implicit stereotype activation effects on memory*, Psychology and aging.

¹ Geraci & Miller (2013), Improving older adults' memory performance using prior task success. (Psychology and aging)

² See Bargh & Chartrand, Studying the Mind in the Middle: A practical guide to priming and automaticity research (Handbook of research methods in social psychology)

³ Priming words taken from a) Will to live in older people's medical decisions: immediate and delayed effects of aging stereotypes, Sibila Marques, Maria Luisa Lima, Dominic Abrams, Hannah Swift. b) Improving memory in old age through implicit self-stereotyping, Becca Levy, 1996. c) Ageism in employment: Exploring the first points of discrimination, Hannah Swift



The interaction between priming and memory scores is significant $F(1,32)=14.632$; $p=0.001$

Survey tool construction (section 2.1)

Most existing validated tools for measuring attitudes to ageing are designed only to be used with older people; however, this tool was developed to capture the range of perceptions across the life course. For this reason, the survey was developed from a number of different sources, but is largely based on the Expectations Regarding Ageing survey instrument,^{4,5} which frames questions around ‘expectations’ of the ageing process, and is therefore applicable to both young and old. The survey was also road-tested in focus groups before being disseminated.

The measure consists of 52 questions which assess the respondent’s attitude to ageing and older people across all 12 domains of ageism, with an average of four questions relating to each domain. By rating individual responses on a 5-point scale, this gave us a nuanced picture of a respondent’s attitudes to ageing, producing a score between -2 and +2 in each domain. For example, an individual may be very positive about their social connections as they age, but negative about their future physical health. These scores were then summed, with all domains weighted equally, to provide a general indicator of an individual’s overall attitudes to ageing. Finally, the scores were aggregated across many respondents, to see how different demographics compared in their attitudes to ageing.

Beyond the attitude to ageing measure, the rest of the survey captured other interesting demographic and attitudinal information about the respondents. The survey was completed between the 8th and 10th November 2017, and conducted through Populus.

Limitations

Due to polling constraints, we were unable to extend the sample to include respondents as young as school age, which would have provided a more complete picture given the topic in question. The national survey was also not part of a longitudinal programme, but only a snapshot of the UK at present, so it was not possible to look into how attitudes have changed with time alongside demographic shifts. Finally, the attitudes to ageing scale is not a statistically validated measure, despite being constructed largely from validated measures. The scores obtained are best used for relative comparisons, as the absolute figures are not of significance in and of themselves.

⁴ Sarkisian, C. A., et al., (2005). Development of the 12 Item Expectations Regarding Ageing Survey. *The Gerontologist*, 45: p. 240-248

⁵ Sarkisian, C. A., et al., (2002). Development, reliability and validity of the Expectations Regarding Ageing (ERA-38) survey. *The Gerontologist*, 42: p. 534-542

Attitudes to Ageing Questionnaire

1: If you had to choose a single age that you would say someone becomes an 'older person', what would it be?

PART 1

We would like you to think about what you expect about ageing. We are asking people of all ages these questions. If you are not already an older person, imagine how you think it will be. If you are an older person, consider how you expect it will be as you continue to age. For the purposes of this questionnaire we suggest that an older person is anyone over 65.

To what extent do you agree or disagree with each of the following statements?

"I expect that as an older person..."

(mark strongly agree/ slightly agree/ neither agree nor disagree/ slightly disagree/ strongly disagree)

		STRONGLY AGREE	SLIGHTLY AGREE	NEITHER AGREE NOR DISAGREE	SLIGHTLY DISAGREE	STRONGLY DISAGREE
1.	I will continue to grow as a person					
2.	Problems with my physical health will not significantly hold me back from doing what I want to do most of the time					
3.	My quality of life will improve					
4.	Things will tend to get worse					
5.	I will not be able to take part in so many activities					
6.	I will become less attractive					
7.	I will be likely to be able to continue to live in my own home					
8.	I will become lonely most or all of the time					
9.	My personality won't change					
10.	I will be less useful					
11.	I will have little useful advice to offer younger people					
12.	I will become more bad-tempered and uncooperative					
13.	I will be able to do most things that I want to					
14.	I will become significantly more forgetful					
15.	There will be many pleasant things about ageing					
16.	I will be in control of my quality of life					
17.	I won't feel excluded from things because of my age					
18.	I will become vulnerable and frail					
19.	I will lose most of my interest in life					
20.	My memory will remain largely as good as it is now					
21.	I will lose my independence					
22.	I will be as happy as I was when I was younger					
23.	I will become wiser					
24.	I will become more good-looking					
25.	I will be happy with the number and quality of the relationships that I have					
26.	I won't be able to put many of my plans and ideas into action					

PART 2

We would now like you to think about your attitudes towards older people in general.

Please remember that for the purposes of this question we suggest that an older person is anyone over 65.

To what extent do you agree or disagree with each of the following statements?

(mark strongly agree/ slightly agree/ neither agree nor disagree/ slightly disagree/ strongly disagree)

		STRONGLY AGREE	SLIGHTLY AGREE	NEITHER AGREE NOR DISAGREE	SLIGHTLY DISAGREE	STRONGLY DISAGREE
1.	It is normal to be unhappy and depressed when you are old					
2.	Only a very small proportion of older people are lonely					
3.	As people age they seem to have little control over how their lives turn out					
4.	Older people don't really understand much about life					
5.	Older people are generally grumpy and rather miserable					
6.	Having a long term illness is just an accepted part of getting old					
7.	Losing your independence is just what happens with ageing					
8.	Older people are generally able to look after themselves					
9.	Most older people tend to let their homes become shabby and unattractive					
10.	Older people waste their time doing activities that don't contribute much to society					
11.	Old age is a time when people can really develop their potential					
12.	Older people are not given respect in society					
13.	Most older people's quality of life is not significantly affected by health problems					
14.	In elections, most older people just vote for their own selfish interests rather than the wellbeing of the younger generation and society as a whole					
15.	Older people have the freedom to do lots of things that they have always wanted to do					
16.	Old age is a time to enjoy life					
17.	Older people's lives are generally pretty empty					
18.	Older people are generally happier than younger adults					
19.	We can learn a lot from older people					
20.	Forgetfulness is a natural part of growing older					
21.	Older people can never really be thought of as attractive					
22.	There isn't any way to escape getting dementia as you age					
23.	Being lonely is just something that happens when people get old					
24.	Fundamentally, older people are really no different from people of other ages					
25.	Older people find it a lot more difficult to learn new skills					
26.	Most older people get set in their ways and are unable to change					

PART 3

To what extent do you agree or disagree with each of the following statements? Try not to let your response to one statement influence your responses to other statements. There are no “correct” or “incorrect” answers.

Answer according to your own feelings, rather than how you think “most people” would answer.

(mark strongly agree/ slightly agree/ neither agree nor disagree/ slightly disagree/ strongly disagree)

		STRONGLY AGREE	SLIGHTLY AGREE	NEITHER AGREE NOR DISAGREE	SLIGHTLY DISAGREE	STRONGLY DISAGREE
1.	I have been ignored or not taken seriously because of my age					
2.	I hardly ever expect things to go my way					
3.	I have usually been treated with dignity and respect despite my age					
4.	I rarely count on good things happening to me					
5.	In uncertain times, I usually expect the best					
6.	If something can go wrong for me, it will					
7.	I'm always optimistic about my future					
8.	Overall, I expect more good things to happen to me than bad					
9.	I enjoy my friends more as I get older					
10.	At my age it is important for me to keep busy					

PART 4

1: Please tick all of the following that apply to you:

- I have children
- I have grandchildren
- I am married/ have a long term partner
- I have older siblings
- I have younger siblings
- I am single
- I am currently divorced/ separated
- I live alone
- None of the above [EXCLUSIVE]

1a: How much have you thought about your retirement?

- A lot
- A fair amount
- Not much
- Not at all
- I'm already retired

2: What best describes your attitude towards retirement?

- I am really looking forward to it
- I feel neutral towards it – neither positive nor negative
- I am anxious/worried
- Other