

Exploring the relationship between loneliness and social cognition in older age

Martina De Lillo, Andrew Martin & Heather J. Ferguson

Background

Healthy aging is characterized with increased difficulty in understanding others' mental states (e.g., belief) and when considering another person's point of view. These age-related difficulties can cause a substantial decline in social participation in older adults, which in turn leads to isolation, loneliness and poor health (Lund et al., 2018).

In this study we tested the relationship between different social cognitive abilities (e.g., perspective taking, inferring mental states) and loneliness in a sample of older adults.

Methods

98 participants (60-86 years old; $M_{age} = 70.2$; $sd_{age} = 6.8$; 66 females) were recruited.

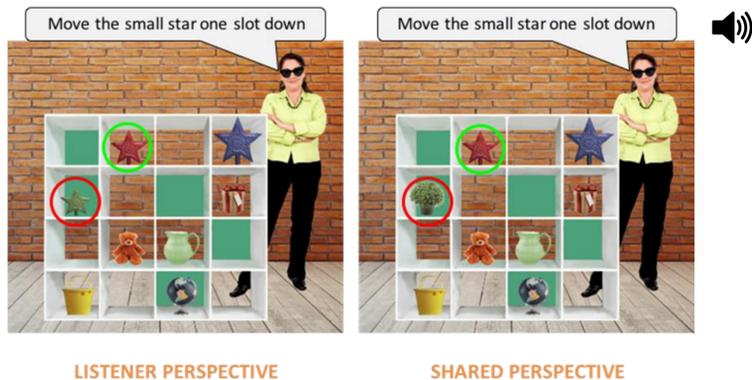
Self-report Questionnaire

Revised UCLA Loneliness Scale (Russell, 1996: R-UCLA) used to measure participants' subjective feeling of loneliness.

Social Functioning Scale (Birchwood et al., 1990) was used as a self-report measure of general social functioning.

Behavioural Tasks

Interactive Reference Assignment task (Keysar et al., 2003)

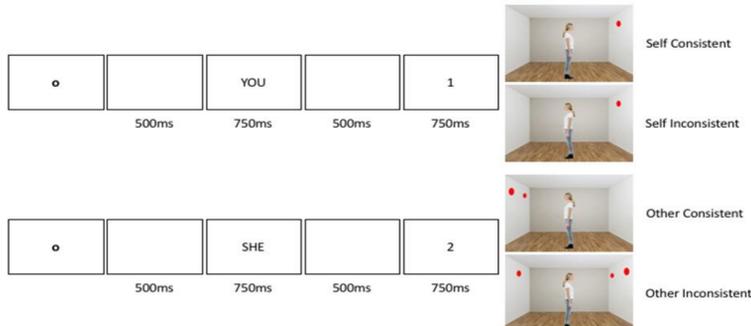


LISTENER PERSPECTIVE

SHARED PERSPECTIVE

- Listener perspective condition:** participants had to take the director's perspective to select the mutually available object, and ignore a hidden competitor object. Accuracy in selecting the mutually available object was calculated (indicated as Egocentric errors).
- Shared perspective condition:** the competitor object was replaced by a neutral object that did not compete with the avatar's instruction.

Visual Perspective-taking task (Samson et al., 2010)



- Egocentric intrusion** where participant judges avatar's perspective and have difficulty when their own perspective conflicts with avatar (calculated as inconsistent *minus* consistent for 'other' perspective trials);
- Altercentric intrusion** where participant judges own perspective and have difficulty if avatar's perspective conflicts with their own (calculated as inconsistent *minus* consistent for 'self' perspective trials).

Strange Stories (White, 2009)

One day Aunt Jane came to visit Peter. Now Peter loves his aunt very much, but today she is wearing a new hat; a new hat which Peter thinks is very ugly indeed. Peter thinks his aunt looks silly in it, and much nicer in her old hat. But when Aunt Jane asks Peter, "How do you like my new hat?," Peter says, "Oh, its very nice".

Participants were presented with 24 stories about everyday events, then had to respond verbally to questions about these stories. Crucially, some stories required them to infer peoples' mental states. Answers to mental stories were scored as '**ToM (Theory of Mind) score**'.

Q: Why does he say that?



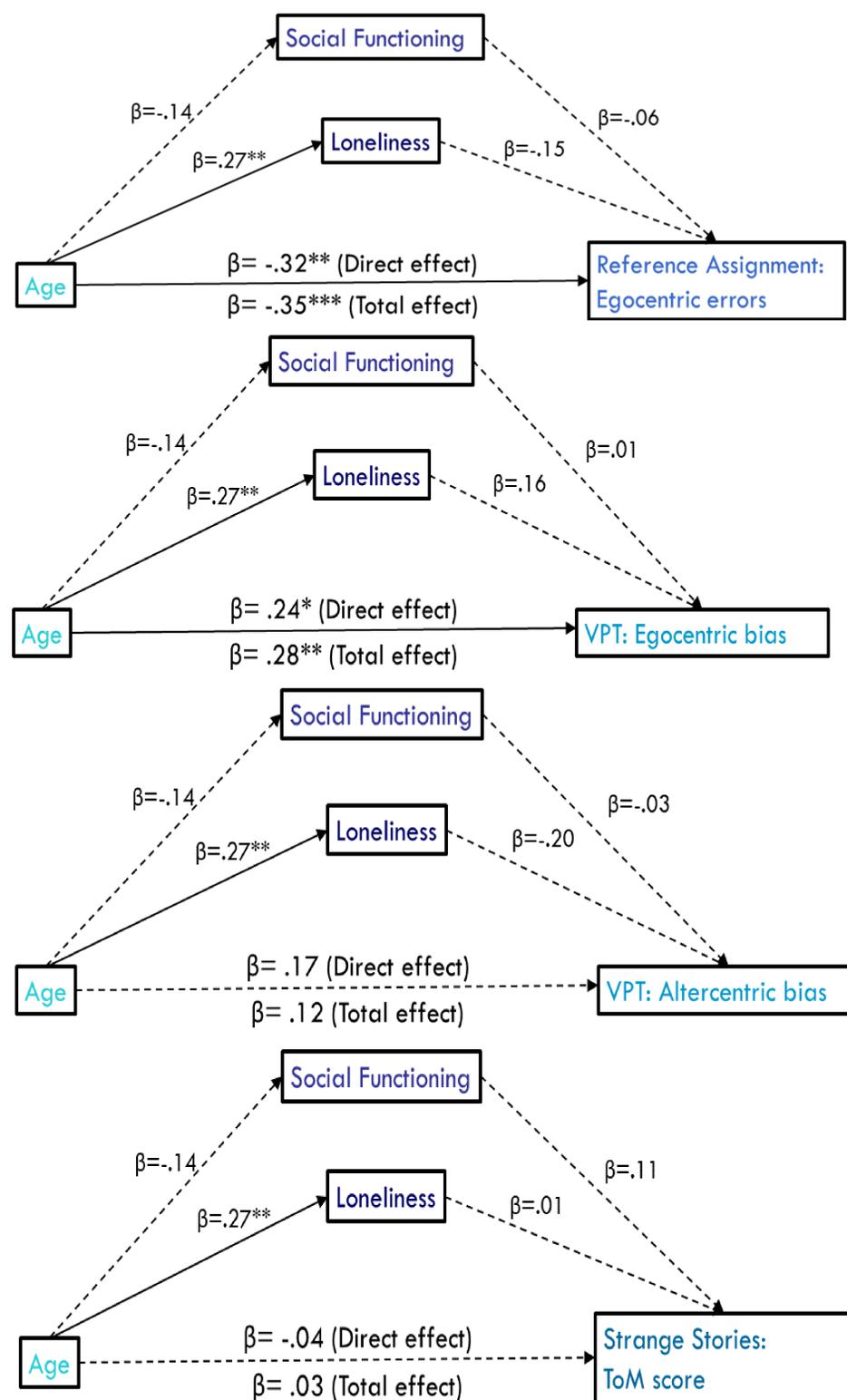
Results

Correlation Analysis

	2.	3.	4.	5.	6.	7.
1. Loneliness	-.48***	-.05	-.22*	.22*	-.14	.27*
2. Social Functioning		.11	.06	-.10	.03	-.14
3. Strange Stories			.13	-.04	.05	.02
4. Reference Assignment				-.05	-.11	-.35***
5. VPT Egocentric Bias					.26**	.28**
6. VPT Altercentric Bias						.12
7. Age						

Asterisks indicate a significant correlation (* $p < .05$, ** $p < .01$, *** $p < .001$), and the cell values show r .

Mediation Analysis



Discussion

- Participants who made more egocentric errors on the interactive reference assignment task and were more susceptible to egocentric interference on the visual perspective-taking task were more likely to self-report higher levels of loneliness. However, mediation analyses showed that the effect of loneliness on egocentric tendencies in the interactive reference assignment task and visual perspective-taking task was not direct, and instead only influenced these processes due to the increased experience of loneliness in older age.
- Overall, results confirmed that with the advancing of age, participants made more errors on the interactive reference assignment task and experienced greater egocentric interference on the visual perspective-taking task. This was not true for mentalizing abilities and altercentric bias, probably indicating that these abilities are not impacted by decreasing cognitive resources, often seen in older age.
- Older age is often characterized by social isolation, which reduces the opportunities for social exchange and to exercise ToM processes, and, to our knowledge, this study is the first to adopt multiple measures of social cognitive abilities to investigate their relationship with loneliness in elderly.