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Are you threatening me? Responses to age-based stereotype threat

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Introduction

- Commonly-held stereotypes about memory and aging are pervasive to older adults *Hummert, 2011; Kite et al., 2005*
 - E.g., beliefs that aging equates to cognitive decline and that older adults are forgetful or demented.
 - Negative attitudes pose serious risks, e.g., increased rate of heart attack, worse memory performance, reduced longevity *Levy et al., 2002*
- Age-based stereotype threat (ABST) can impair older adults' memory performance
 - Concerns about confirming stereotype can lead to underperformance from true ability *Lamont et al., 2015*
 - Can lead to false positive diagnoses of mild cognitive impairment or dementia *Mazerolle et al., 2017*
 - Theorized to be due to increased anxiety and level of confidence (self-efficacy) *Chasteen et al., 2005; Hess, 2006*
 - Informing older adults about younger participants decreased older adult's memory performance *Mazerolle et al., 2012*

Methods

Study Design

- Experimental, between groups; 2 threat groups: High Threat ($n=14$), Null Threat ($n=15$)

Participants

- $n = 29$: 56-86 years old, $M=74.69$, $SD=7.55$, 90% female, 86% white, 49% completed Bachelor's degree
- Community-dwelling adults from San Joaquin County area

Measures

- Threat condition:** High vs. Null instructions *Mazerolle et al., 2017*

HIGH THREAT INSTRUCTIONS

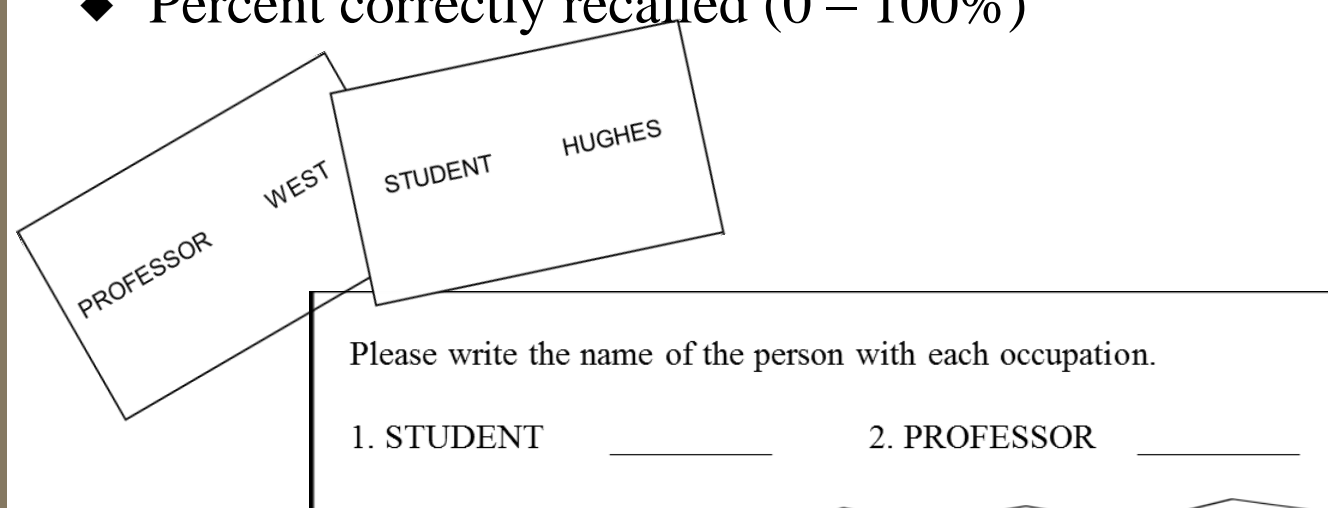
Both younger adults and older adults are taking part in this study. The first activity is a memory test – your memory for pairs of names and occupations will be tested. Younger and older adults may not perform as well as each other on this test. Please indicate your date of birth on your instructions sheet.

NULL THREAT INSTRUCTIONS

Both younger adults and older adults are taking part in this study. The first activity is about making associations – you will study pairs of names and occupations. This task is age-fair. That means there is typically no difference in how well younger and older adults do. Please indicate your date of birth on your instructions sheet.

- Memory (Name-Occupation Task):** *Strickland-Hughes, 2017*

- Encode (6 min.) and recall (4 min.) 30 pairs of occupations and names on cards
- Percent correctly recalled (0 – 100%)



- Anxiety:** Task-Related Anxiety *Abrams et al., 2004*

- Self-report of level of anxiety felt during the memory task using scale from 1 = not at all to 7 = very much
- 8 ratings, e.g., tense, jittery, calm

- Subjective age:** How old a person feels (in years)

- Mean score from 5 items expressed as a proportion of one's chronological age
- (Subjective Age – Chronological Age) x 100

- Task-Specific Self-Efficacy:** Confidence in ability to do the name-occupation memory task *Chasteen et al., 2005*

- 5 items; e.g., *I can handle this task; I am unsure if I have the ability to do well on this task*
- Sum of 5 ratings using a 7-point scale from *strongly disagree* to *strongly agree* (range: 5-25)
- Higher score indicates greater confidence

- General Memory Evaluation:** Assess global beliefs about memory *Strickland-Hughes et al., 2016*

- Evaluation of recent memory performance, comparison of one's memory to same-aged peers, and overall satisfaction with recent memory performance
- Sum of 4 questions on 7-point Likert scale (e.g., 1 = very unsatisfied to 7 = very satisfied)
- Higher scores: greater perceived general memory ability

- Perceived Stereotype Threat** *Chasteen et al., 2005*

- Measures participants levels of perceived stereotype threat & is used as a manipulation check
- 5 statements on 5-point Likert scale

Research Aims

- Test the impact of an age-based stereotype threat manipulation (replication of *Mazerolle et al., 2016*)

We hypothesize worse memory performance on the occupation-name recall task for HIGH threat condition than NULL threat condition.

- Explore the self-regulatory mechanisms that might moderate/mediate age-based stereotype threat. (i.e., task-related anxiety, memory self-efficacy, general memory evaluation, and subjective age)

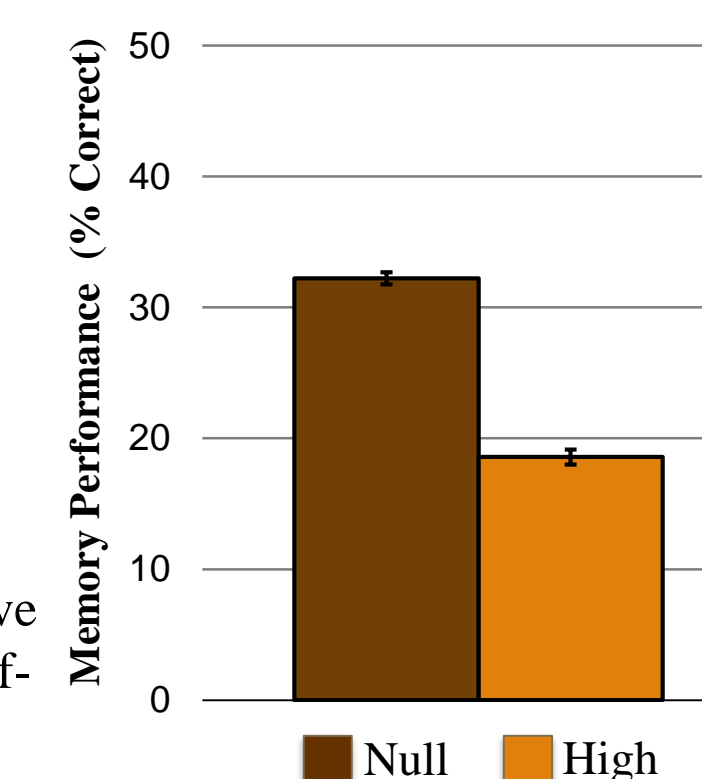
We expect that the high threat condition will be related to higher levels of task anxiety, lower memory self-efficacy, more negative appraisals of memory performance, and feeling older relative to one's age

Results

Aim 1: ABST Replication

As expected, memory performance was worse for participants randomly assigned to high threat ($M=19\%$, $SD=18\%$) than participants randomly assigned to null threat ($M=32\%$, $SD=22\%$), $t(27)=1.81$, $p=0.041$.

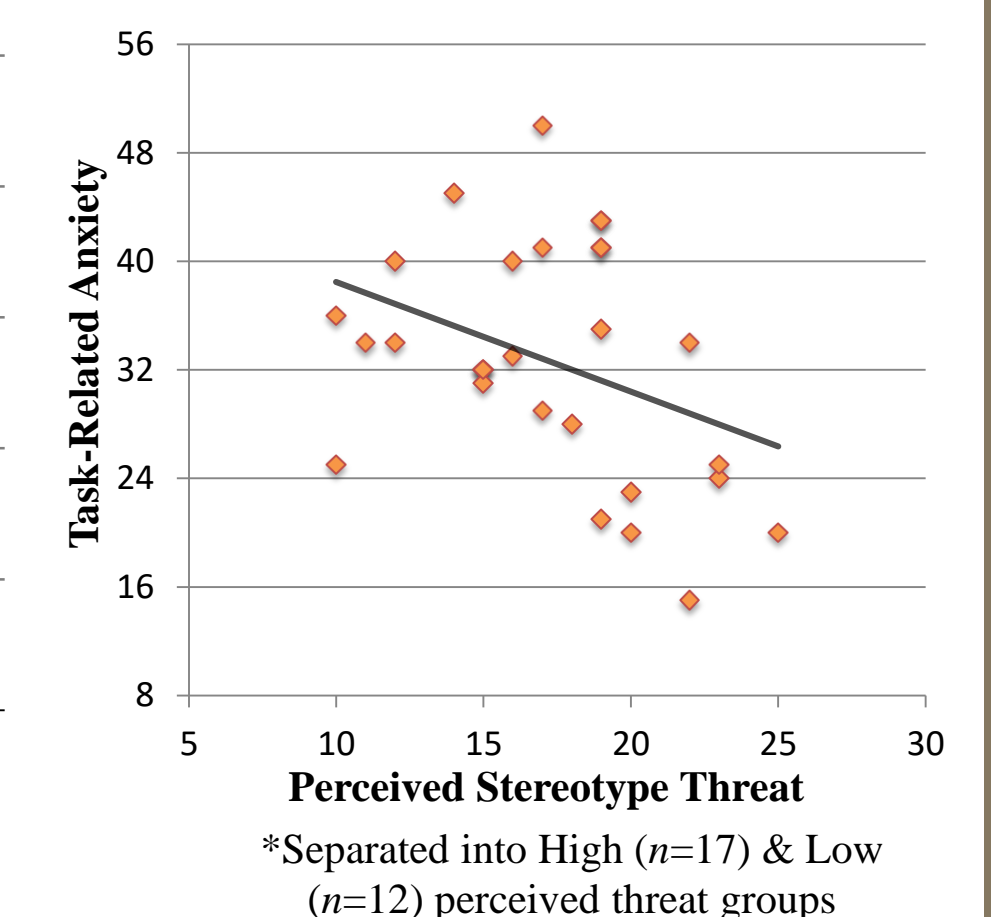
Memory Performance & Threat Condition



Aim 2: Mechanisms

- Found no relationship between being in the high threat condition & feeling more threatened, having less anxiety, more negative evaluations of memory, nor less memory self-efficacy
- Higher perceived threat related to less task-anxiety, feeling older, and lower self-efficacy

Perceived Threat & Anxiety



High vs. Null Stereotype Threat Condition Groups

	$t(27)$	p	High		Null	
			M	SD	M	SD
Memory Performance	1.81	.041	19%	18%	32%	22%
Subjective Age	1.02	.318	-18.39	7.34	-21.91	10.82
Memory Evaluations	0.79	.435	11.53	3.55	12.63	3.90
Memory Self-Efficacy	0.04	.487	3.41	.75	3.42	.70
Task Anxiety	-0.38	.703	32.00	9.08	33.26	8.50
Perceived Stereotype Threat	-0.56	.582	17.64	4.30	16.8	3.70

High vs. Low Perceived Stereotype Threat Groups

	$t(27)$	p	High		Low	
			M	SD	M	SD
Memory Self-Efficacy	2.21	.033	3.75	.73	3.18	.62
Subjective Age	1.38	.176	-22.2	9.95	-17.41	-7.89
Task Anxiety	.96	.341	31.35	10.4	34.50	5.19
Memory Evaluations	-.074	.477	12.14	3.65	12.04	3.95
Memory Performance	-.723	.472	.28	.20	.22	.22

Discussion

- Replicated ABST manipulation (memory)
- Higher perceived threat related to lower anxiety and lower memory self-efficacy
- Threat effects may be due to participant characteristics (i.e. less prone to anxiety, more positive attitudes)
- Trend towards feeling older under higher stereotype threat (both experimentally-assigned and perceived)
- Small sample size, but data collection on-going
- Selective sample (e.g., majority white female; members of lifelong learning; high level education); recommend replication with diverse samples
- Long-term goal:** Reliably produce ABST, and identify key mechanisms, in order to design and test interventions to promote ABST resilience