



Are the elderly always poorer witnesses? A meta-analysis of moderator variables

Martschuk, Natalie, Wilhelm, Kerstin, & Sporer, Siegfried L.

University of Giessen, Germany

Natalie.Martschuk@psychol.uni-giessen.de

EAPL 2010 Gothenburg - Sweden



Theoretical background I

- ▶ Positive correlation of **exposure time** with identification (Shapiro & Penrod, 1986)
 - ▶ Elderly: Slower processing speed (Parkin, 2000)
- ▶ Negative influence of **retention interval** on memory for faces (Deffenbacher, Bornstein, McGorothy, & Penrod, 2008)
 - ▶ Elderly: Greater influence due to age (Moulin, Thompson, Wright, & Conway, 2007)
- ▶ Influence of **lineup presentation** (simultaneous vs. sequential) on identification accuracy (Stebay, Dysart, Fulero, & Lindsay, 2001)
 - ▶ Elderly: More problems with absolute decision criterion (response bias)



Theoretical background II

- ▶ **Own-group effect**

- ▶ Better recognition of faces of the own group than from the other group

- ▶ **Analogous to the own-race effect**

- Better recognition of the own age group than from the other age group

(Sporer, 2001)



Method: Moderator analysis

- ▶ Fixed effects model (FEM)

- ▶ Assumptions:

- ▶ Effect size heterogeneity due to unobserved random sources
 - ▶ Heterogeneity explained by systematic variables

- ▶ Mixed effects model (MEM)

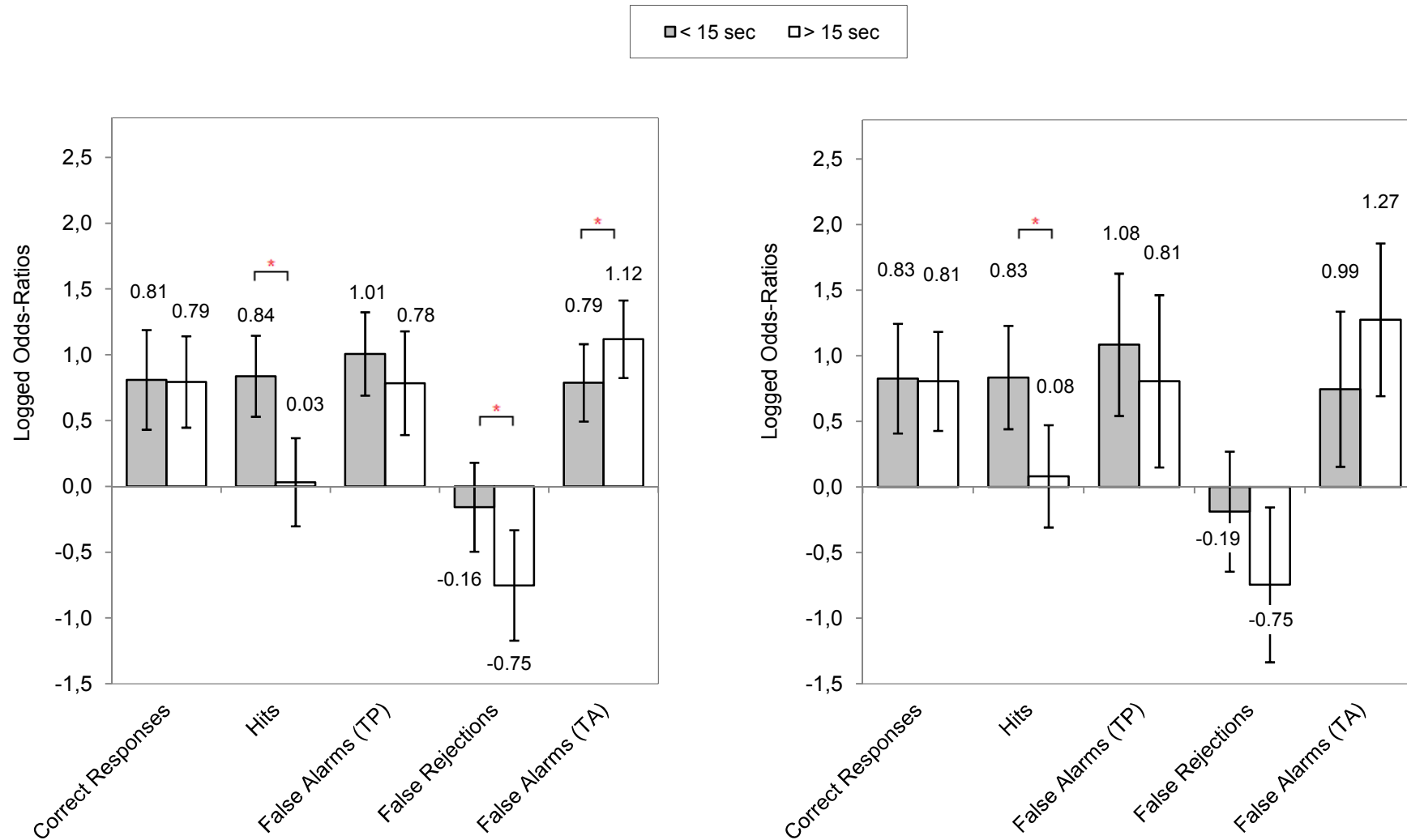
- ▶ Variability attributed to:

- ▶ Systematic between-study differences
 - ▶ Subject-level sampling error
 - ▶ Additional random component

(Lipsey & Wilson, 2001)

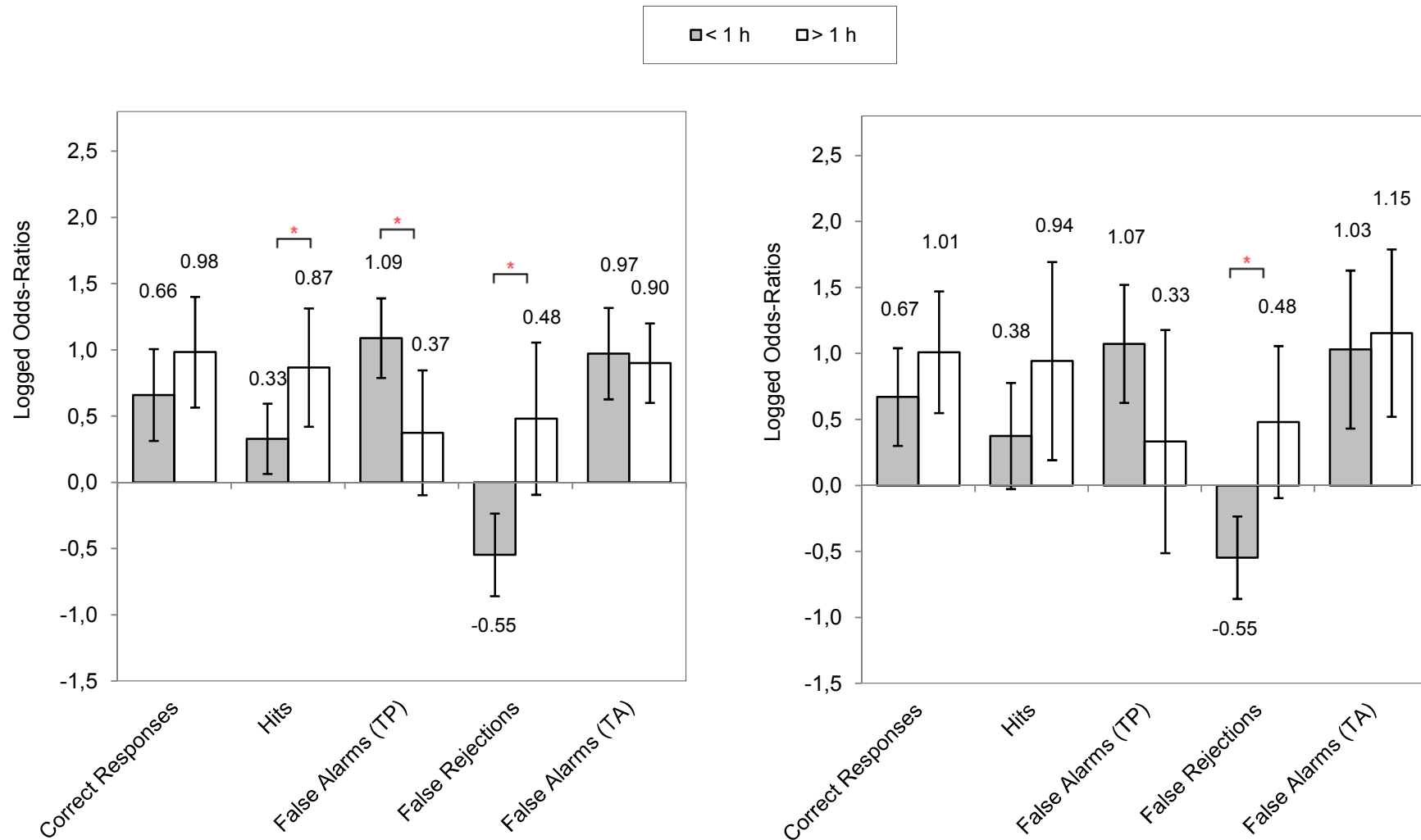


Exposure time: FEM vs. MEM



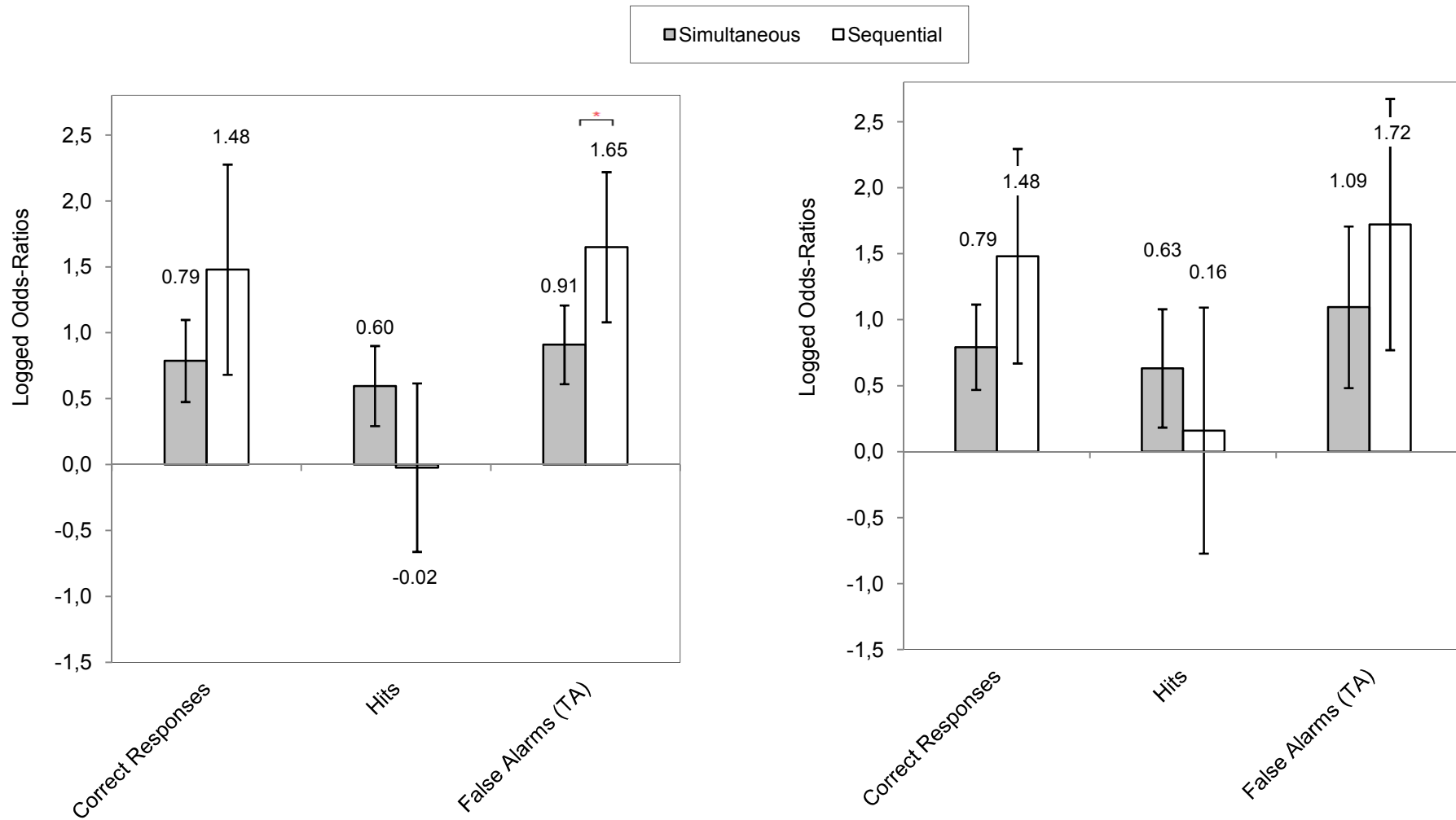


Retention interval: FEM vs. MEM





Lineup type: FEM vs. MEM





Own age effect?

Dependent Variable	k	N	$mLOR$	95% CI_u	95% CI_o	mOR	Z	p	Homog. Q	N_{FS}
Correct Responses	7	506	.636	.264	1.008	1.889	3.351	.001	20.32 *	41
TP Hits	8	619	.358	.028	.688	1.431	2.129	.033	20.43 *	31
TP False Alarms	7	559	.308	-.049	.664	1.360	1.693	.091	12.50	
TP False Rejections	7	559	.470	.079	.867	1.600	2.356	.006	18.16 *	11
TA False Alarms	7	506	.563	.212	.914	1.756	3.144	.002	8.94	22

Notes: Odds Ratio > 1 means superiority of younger to elderly in identification performance. N_{FS} estimates the number of unpublished studies reporting null results needed to reduce the effect to the point of nonsignificance.

* $p < .05$



Discussion and implications

- ▶ Exposure time moderates
 - ▶ **Hits**, False rejections
- ▶ Retention interval moderates
 - ▶ Hits, False Alarms (TP), **False rejections**
- ▶ Lineup type moderates
 - ▶ False Alarms (TA)
- ▶ No evidence of own-age effect
- ▶ Further possible moderators
 - ▶ Verbal overshadowing effect
 - ▶ (Un-)biased instructions
 - ▶ Context reinstatement





Any questions?



Contact information

Dipl.-Psych. Natalie Martschuk

Natalie.Martschuk@psychol.uni-giessen.de

Special thanks to authors who sent additional material!