



Perceptual Load Effects in Rejection Sensitivity Across Facial and Non-Facial Stimuli.

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Background

- Rejection Sensitivity (RS) - a personality trait that encourages maladaptive responses to rejection⁸.
- RS is predictive of Social Anxiety Disorder (SAD)^{17,27,18}.
- RS shows an attentional bias (AB) to facial stimuli similarly to the AB found in SAD^{8,9,21,18}.
- Perceptual Load Theory** – selective attention is dependent on the amount of attentional resources not consumed by visual information within the current visual field¹⁵.
- P3b**- Neural index of attentional resource allocation and attention orienting^{19,20,11}.
- AB in SAD is affected by load^{2,24}. Some associated traits of SAD show a resilience to load^{22,23,25,3}.

Research Question: Does too much visual information block AB in highly RS groups?

Predictions:

- H1:** Facial images compared to non-facial images should be more salient distractors to highly RS individuals compared low RS individuals resulting in increased RTs, lower ACC, and increased P3b amplitudes when faces are present in highly RS individuals.
- H2:** Facial images compared to non-facial images should be more salient in highly RS compared to low RS individuals in low loads only compared to high loads. High loads should show similar RT, ACC, and P3b amplitudes across both high and low RS when facial stimuli are present compared to non-facial stimuli.

Methods

Rejection Sensitivity Questionnaire (RSQ) – 18 Item

	M	SD	N
Low RSQ Scores (Bottom 50%)	13.01	3.53	33
High RSQ Scores (Top 50%)	7.26	1.66	33

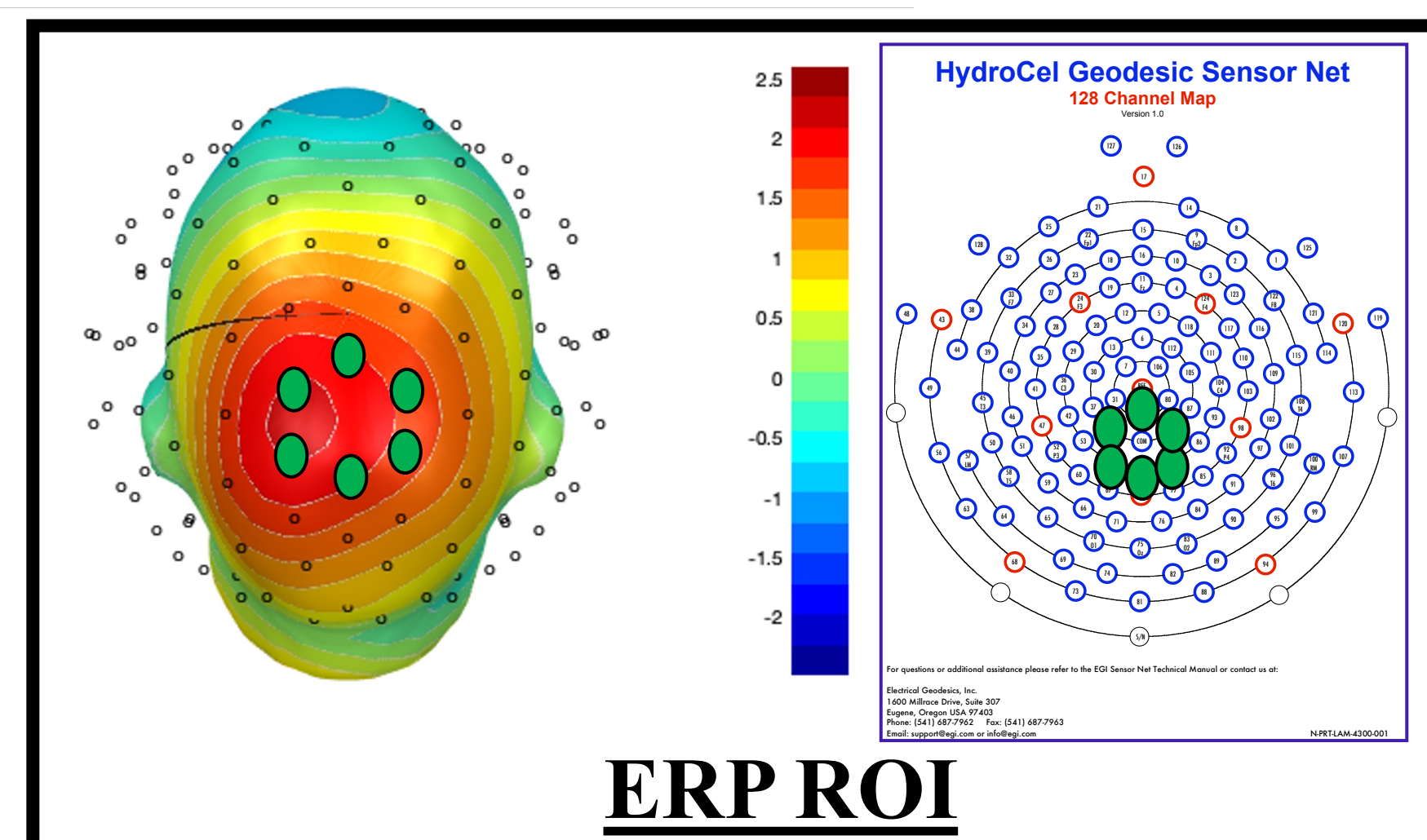
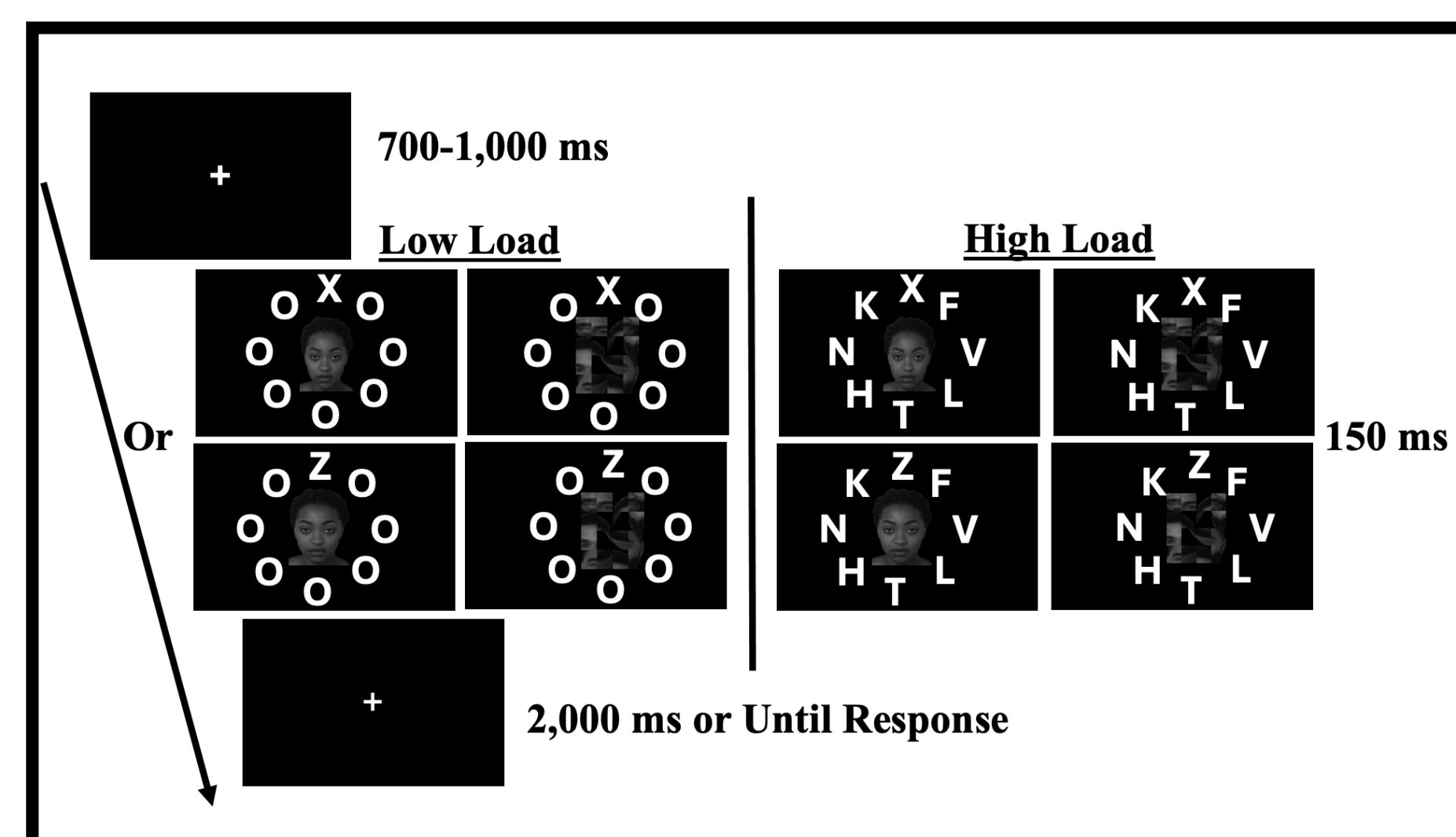
- High RS - Low RS scores $\Delta M = 5.75$ [$F(1,64) = 71.92, p < .05, \eta^2 = .529, \beta = 1.0$].

Visual- Search Task

- Adapted by Theodorou and colleagues (2021)
- Objective:** select target letter (X or Z) from set.
- Blocked by load (Low & High)
- 128 trials per block

Foveal Distractors

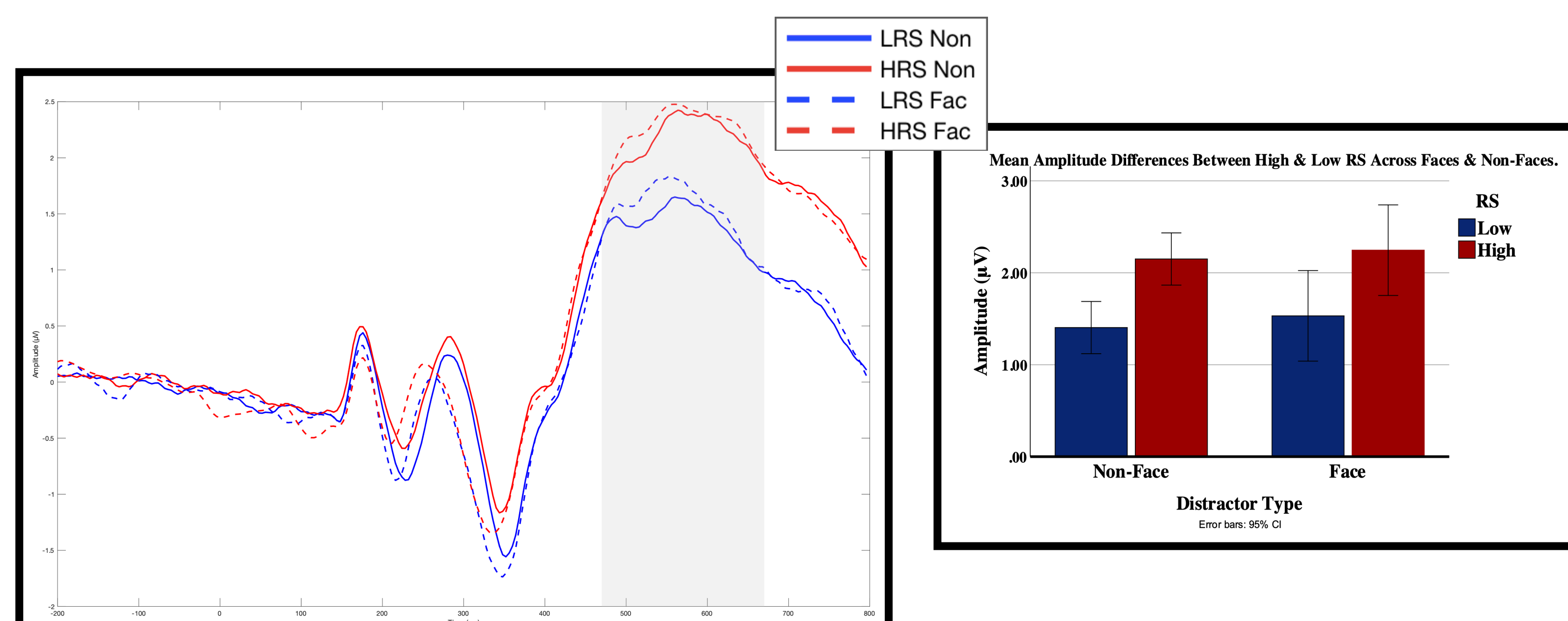
- Facial images: pulled from the Complex Emotional Expression Database (CEED)¹.
- Non-Facial images: Facial images scrambled into 4x4 matrix



ERP ROI

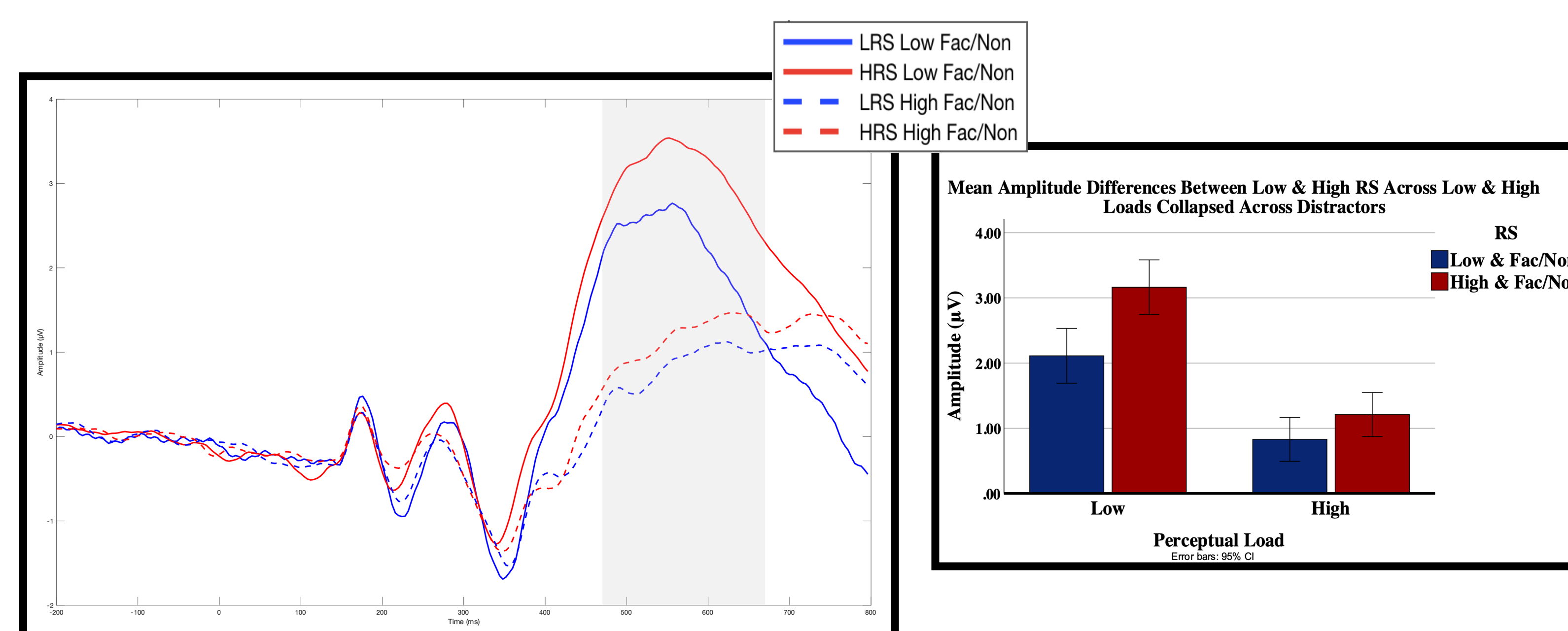
Results

RS Amplitude Differences



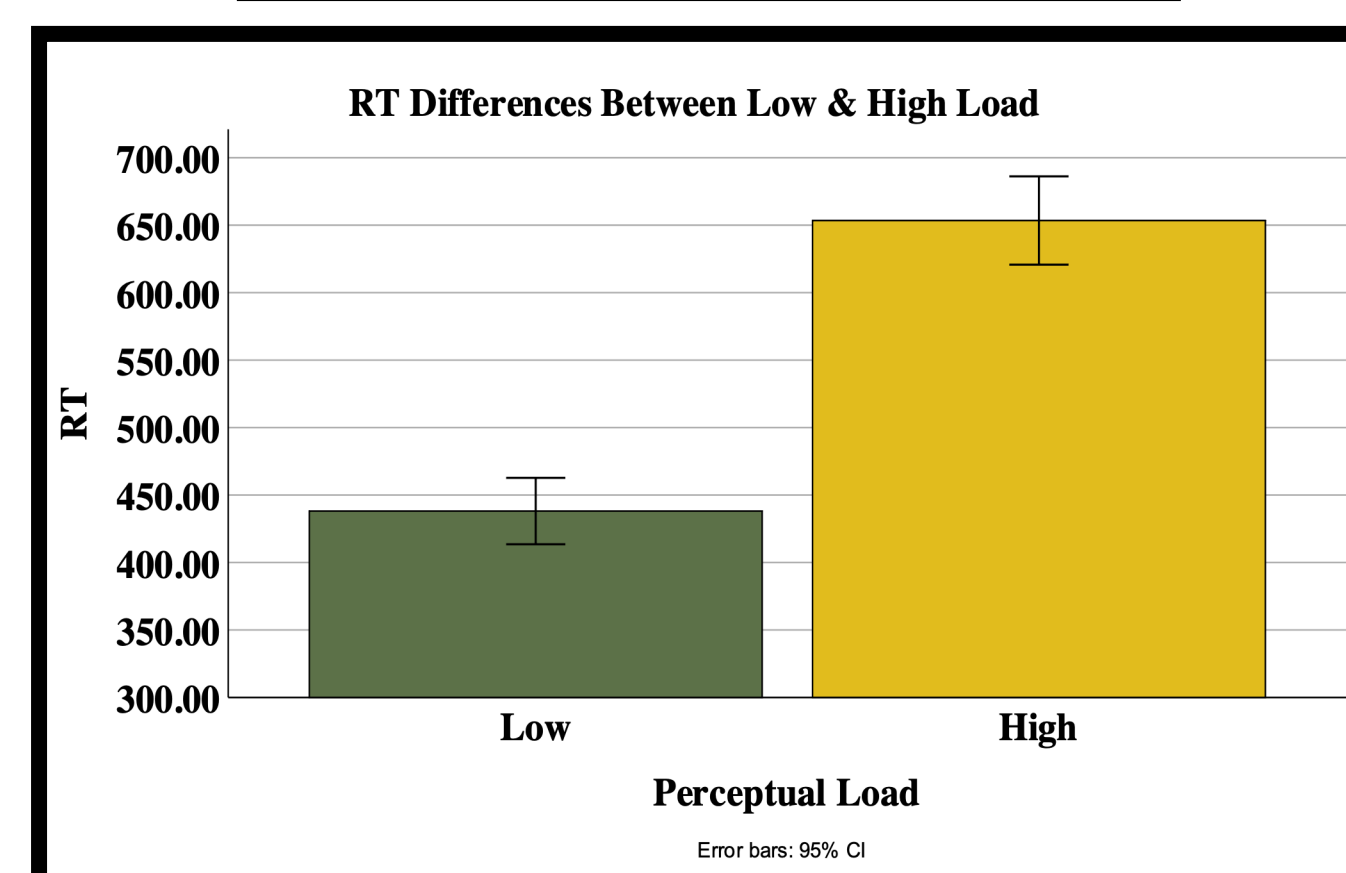
- There was no main effect of distractor type or any interaction effects. A main effect of RS was observed with High RS ($M = 2.19, SD = 1.80$) groups displaying greater overall amplitudes [$\Delta M = .716, p < .001, \eta^2 = .179, \beta = .929$] than Low RS groups ($M = 1.47, SD = 1.48$).

Load Amplitude Differences



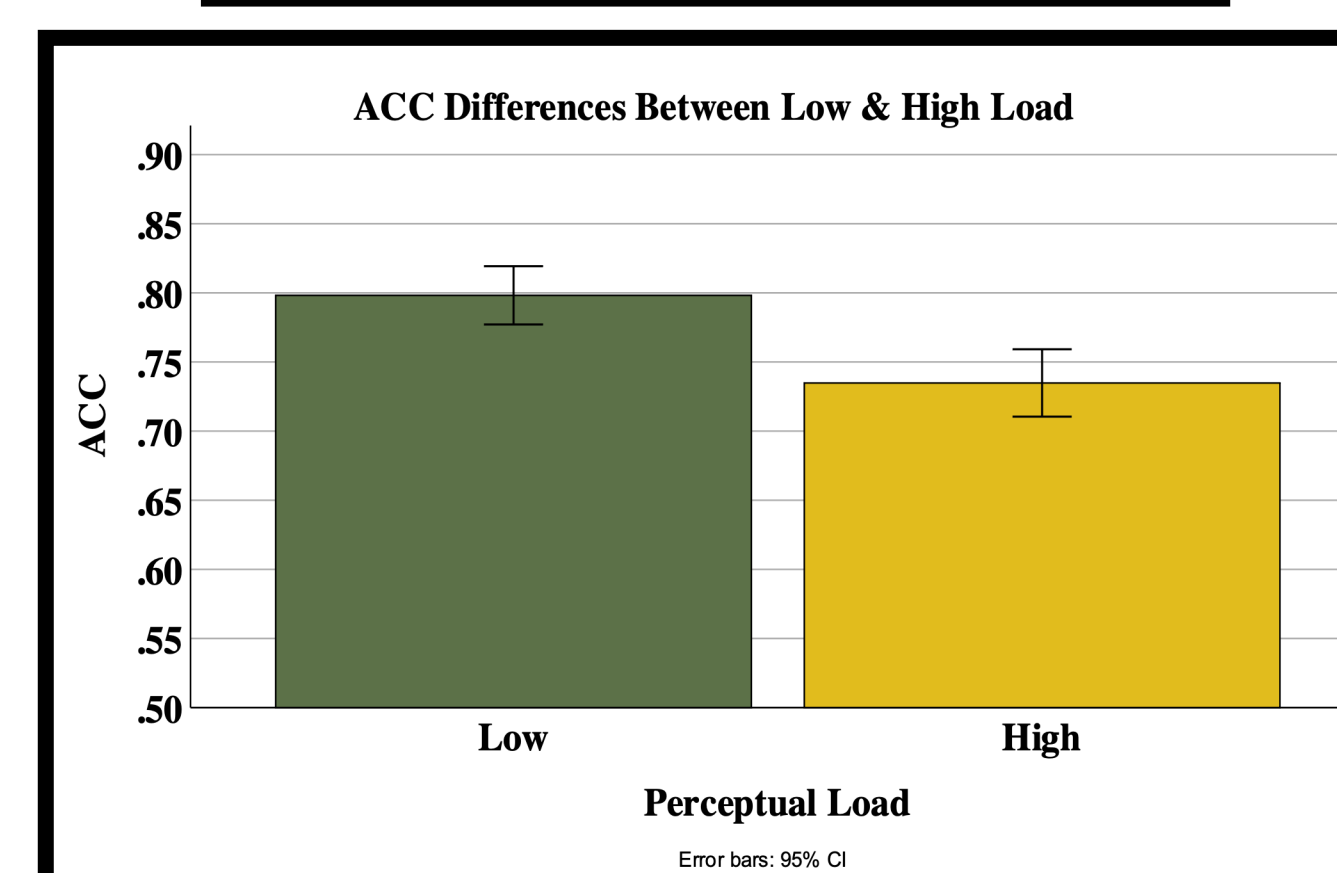
- There was no significant three-way interaction between load, distractor, and RS. A main effect of load was observed with High load ($M = .94, SD = 1.14$) conditions displaying lower overall amplitudes [$\Delta M = -1.62, p < .001, \eta^2 = .537, \beta = 1.0$] than Low load conditions ($M = 2.73, SD = 1.18$).

Load RT Differences



- High - Low $\Delta M = 215.32$ ms [$p < .001, \eta^2 = .749, \beta = 1.0$]

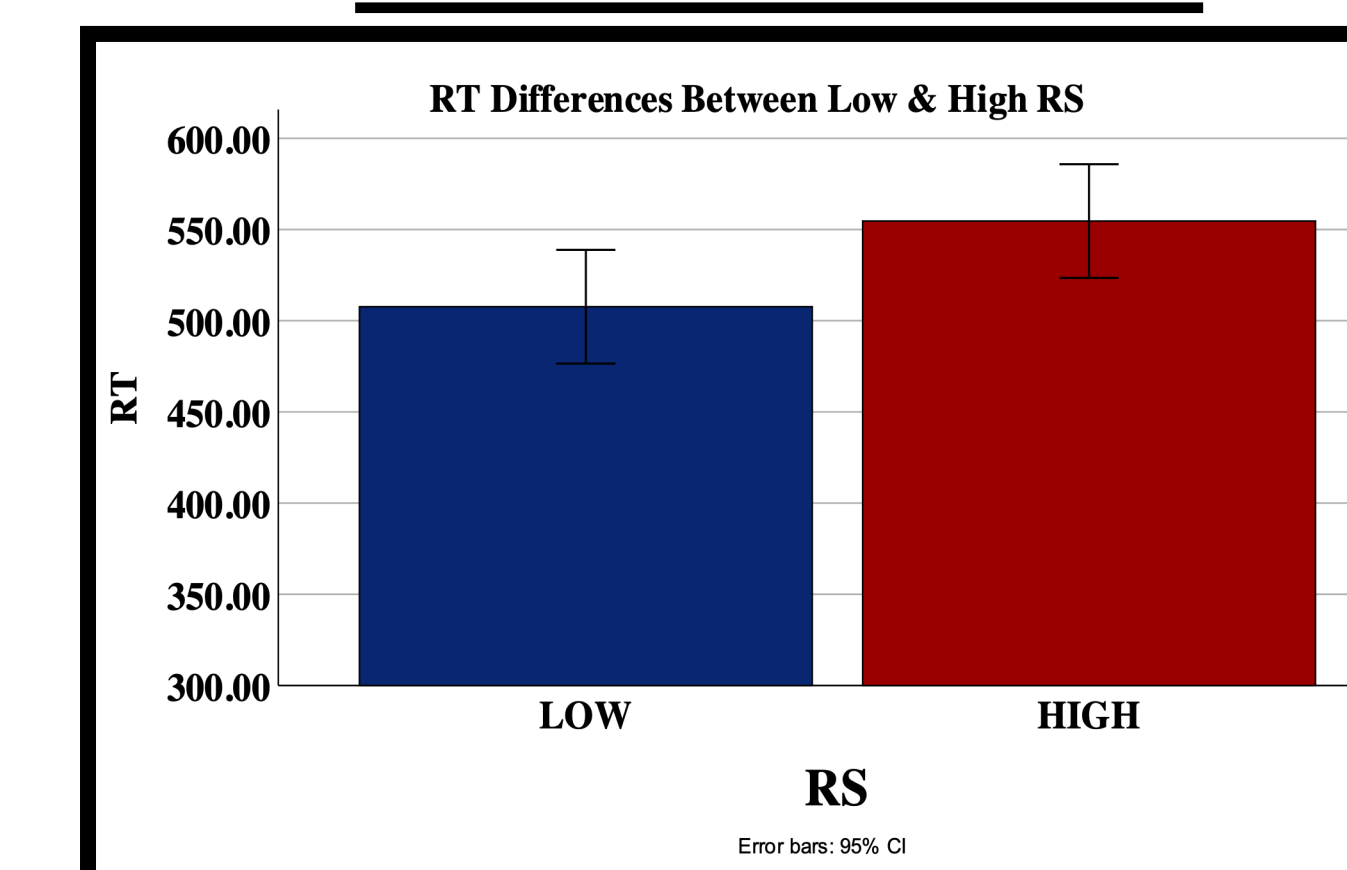
Load ACC Differences



- High - Low $\Delta M = -.063$ [$p < .001, \eta^2 = .326, \beta = 1.0$]

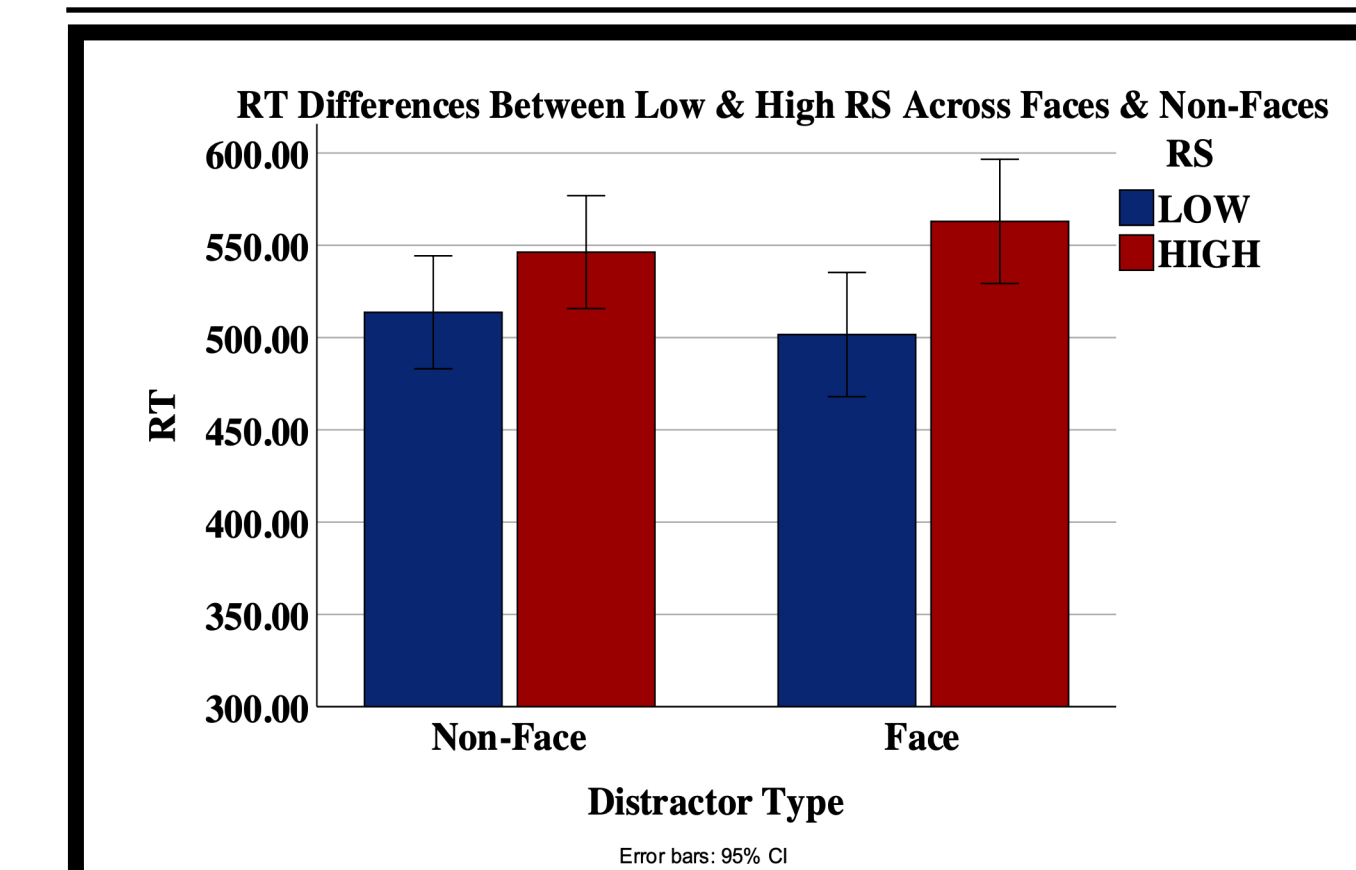
Results

RS RT Differences



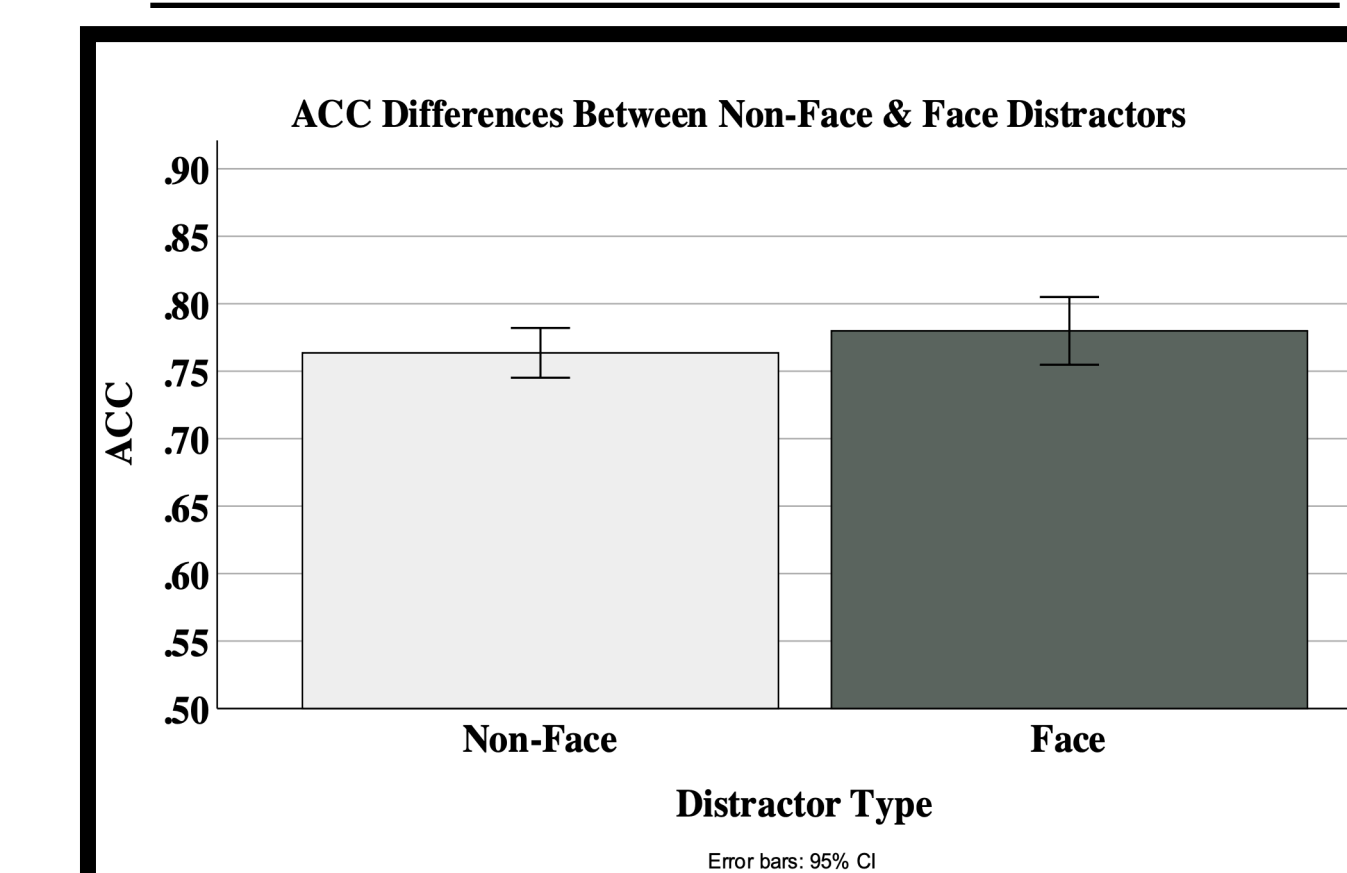
- High - Low RS $\Delta M = 46.97$ ms [$p = .037, \eta^2 = .066, \beta = .554$]

RS x Distractor RT Differences



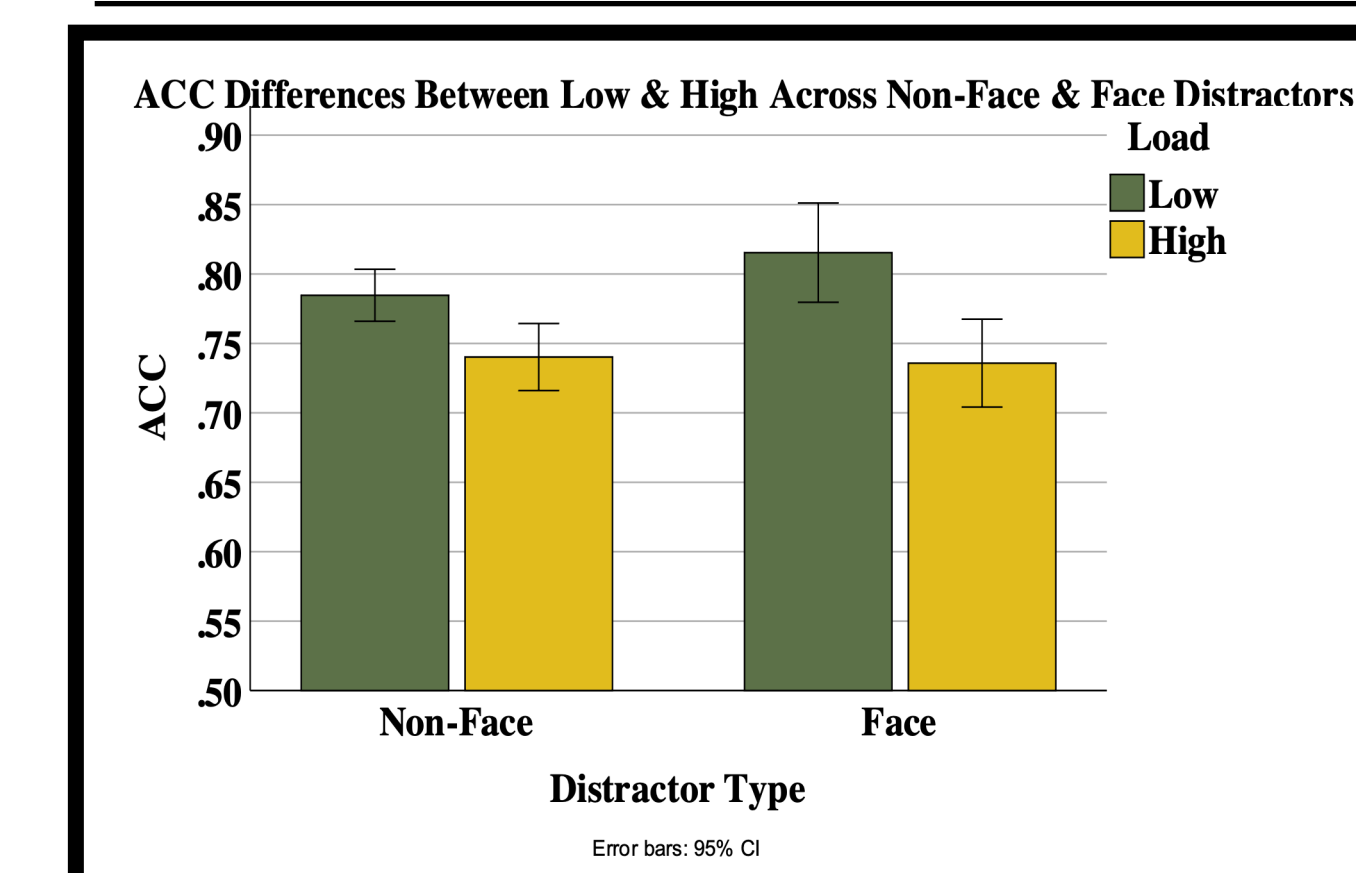
- High - Low (Face) $\Delta M = 16.66$ ms, [$p = .012, \eta^2 = .094, \beta = .717$]
- High - Low (Non-Face) NS

Distractor ACC Differences



- Non-Face - Face $\Delta M = -.016$ [$p = .04, \eta^2 = .064, \beta = .541$]

Load x Dis. ACC Differences



- Low - High (Face) $\Delta M = .031$ [$p = .012, \eta^2 = .09, \beta = .702$]
- Low - High (Non-Face) NS

	ACC	RT	μV
RS		$F(1,64) = 4.53^*$	$F(1,130) = 12.20^{***}$
Distractor	$F(1,64) = 4.39^*$		
Load	$F(1,65) = 31.41^{***}$	$F(1,65) = 194.21^{***}$	$F(1,65) = 64.89^{***}$
RS x Distractor		$F(1,64) = 6.61^*$	
RS x Load			
Load x Distractor	$F(1,65) = 6.40^*$		
Load x Distractor x RS			

* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Conclusions

- Increased P3b amplitudes and increased RTs in highly RS groups show an overall increase in attentional resource allocation compared to low RS groups.
- Non-Faces reduced accuracy greater in the visual search task compared to faces. Suggesting facial distractors may not have an effect on performance.
 - However, facial stimuli increased RTs greater in highly RS groups than low RS—suggesting a potential for bias in performance in highly RS.
- Significant load effects were seen in all measures. Suggesting that high loads reduced attentional resources in both low and high RS groups similarly
 - A lack of a significant interaction between load, distractor, and RS suggests that this holds true regardless of distractor type present.
 - A significant interaction between load and distractor type suggests that meaningful stimuli may be affected by load differently. Further testing is required.

