



Increased Distractibility Associated with Increased Post Traumatic Stress Disorder Symptom Severity

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INTRODUCTION

- Individuals with PTSD report increased distractibility, but often perform within normal limits on standard neuropsychological measures of attention.
- A computer-based task that measures distractibility while varying the number of distractors, perceptual load, has shown to be sensitive to individual differences in trait anxiety (Lavie et al., 1995; Bishop, 2009) and may be sensitive to PTSD severity.
- We hypothesize that, due to compromised attentional control mechanisms in PTSD, symptom severity will be related to increased distractibility during the presence of many distractors but not with the presence of only one distractor.

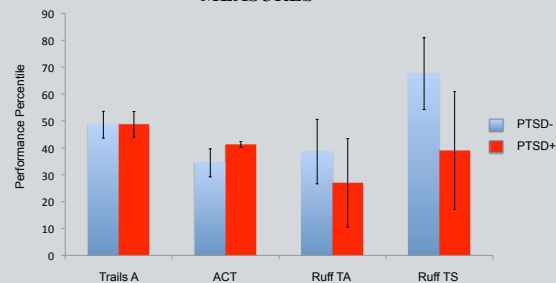
PARTICIPANTS

- 9 soldiers and veterans of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) whose ages ranged from 22 to 53 (M=34, SD=11).
- Participants in Group 1 – Low PTSD checklist score (PTSD-)
- Participants in Group 2 – High PTSD checklist score (PTSD+)

PTSD-	AGE	EDUCATION	PCL Score
1	22	13	52
2	26	13	51
3	27	13	50
4	46	12	41
5	27	13	24

PTSD+	AGE	EDUCATION	PCL Score
6	53	16	67
7	31	14	78
8	31	12	72
9	44	14	61

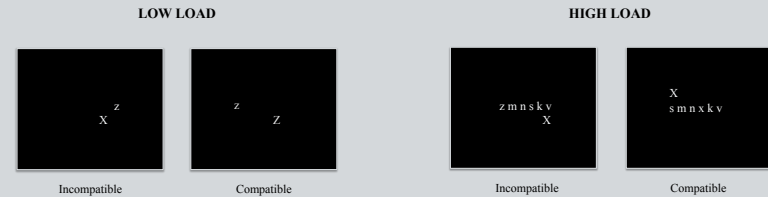
STANDARD NEUROPSYCHOLOGICAL MEASURES



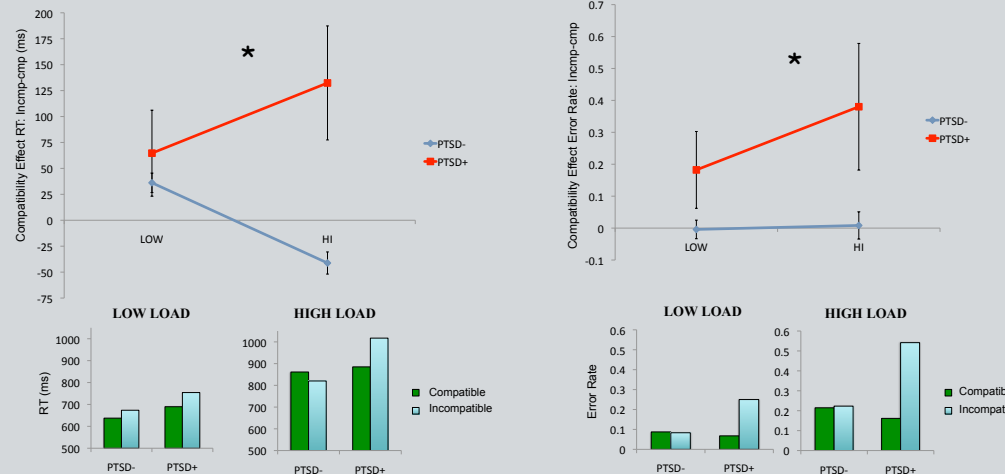
- Neuropsychological measures of attention failed to detect differences in performance between groups.
- All between group t-test p-values greater than 0.2.

- Participants viewed briefly presented displays (50 ms), and discriminated between two central targets, 'x' or 'z,' in the presence of one distractor. Distractors, also 'X' or 'Z', could either be the same (compatible) or different (incompatible) than the central target. During "Low Load" the target was presented in isolation. During "High Load" the target was embedded in a string of five non-target letters. Reaction time and accuracy were recorded by button press.

PROCEDURE



RESULTS



Could these group differences be explained by an increase in general task difficulty?

- PTSD+ do not show an impairment for compatible trials even with increasing load for both reaction time and accuracy.
- Impairments in PTSD are specific to incompatible trials at increasing load.

* This denotes a significant 3-way interaction between Compatibility, Load, and Group (p values < .05).

CONCLUSIONS

- PTSD- show decreasing interference with increasing perceptual load, while PTSD+ show increasing interference with increasing perceptual load.
- This is consistent with failure of top-down attentional control in participants with PTSD.
- This experiment reveals an attentional deficit in PTSD to which standard neuropsychological tests of attention are insensitive.
- Unlike standard neuropsychological measures, performance on this computerized task of attention reveals changes in attention associated with PTSD that are consistent with participants' self report of increased distractibility.