

Trait of sensory processing sensitivity (SPS) modulates processing of multi-modal emotional stimuli

Caiyun Wang¹, Fang Cui¹

¹School of Psychology, Shenzhen University, Shenzhen, China

ID:149604222

1 Introduction

Sensory processing sensitivity (SPS) is a temperament trait involving the central nervous system, found in more than 100 species. Approximately 20% of the people in the population are considered highly sensitive persons¹. People with high SPS trait tend to show stronger emotional responses to environmental stimuli and deeper cognitive processing^{2, 3, 4}.

In this study, we aimed to investigate how the SPS trait modulates the processing of visual, auditory and multi-modal emotional stimuli.

2 Methods

Participants : those who scored as top and bottom on the Highly Sensitive Person Scale (HSPS) were selected, 31 in HSP group; 30 in LSP group.

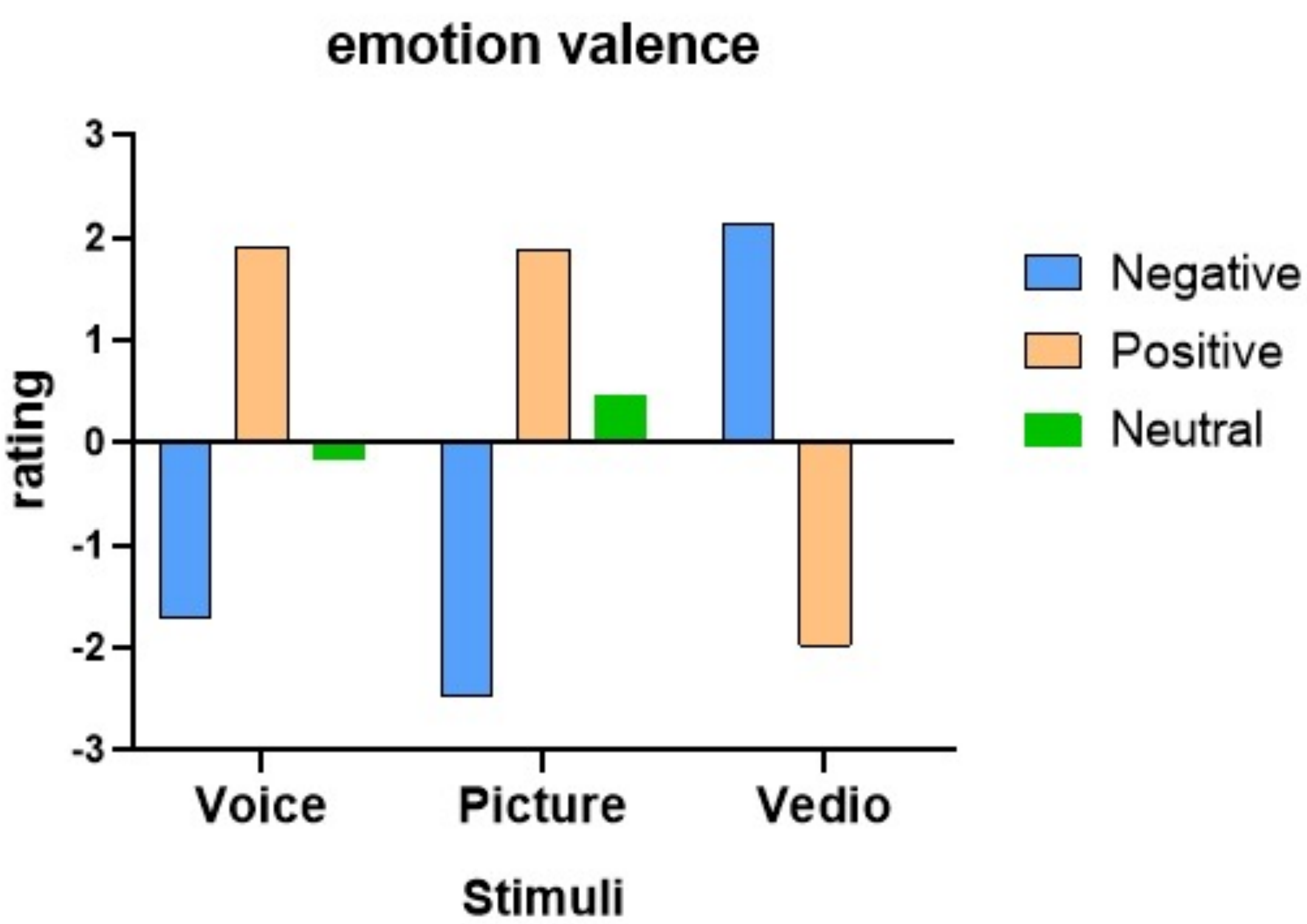
Materials: emotional pictures, sound and videos selected from Chinese emotional picture/sound/video system.

Task: Participants were instructed to rate the emotional valence as intensity of the presented stimuli.



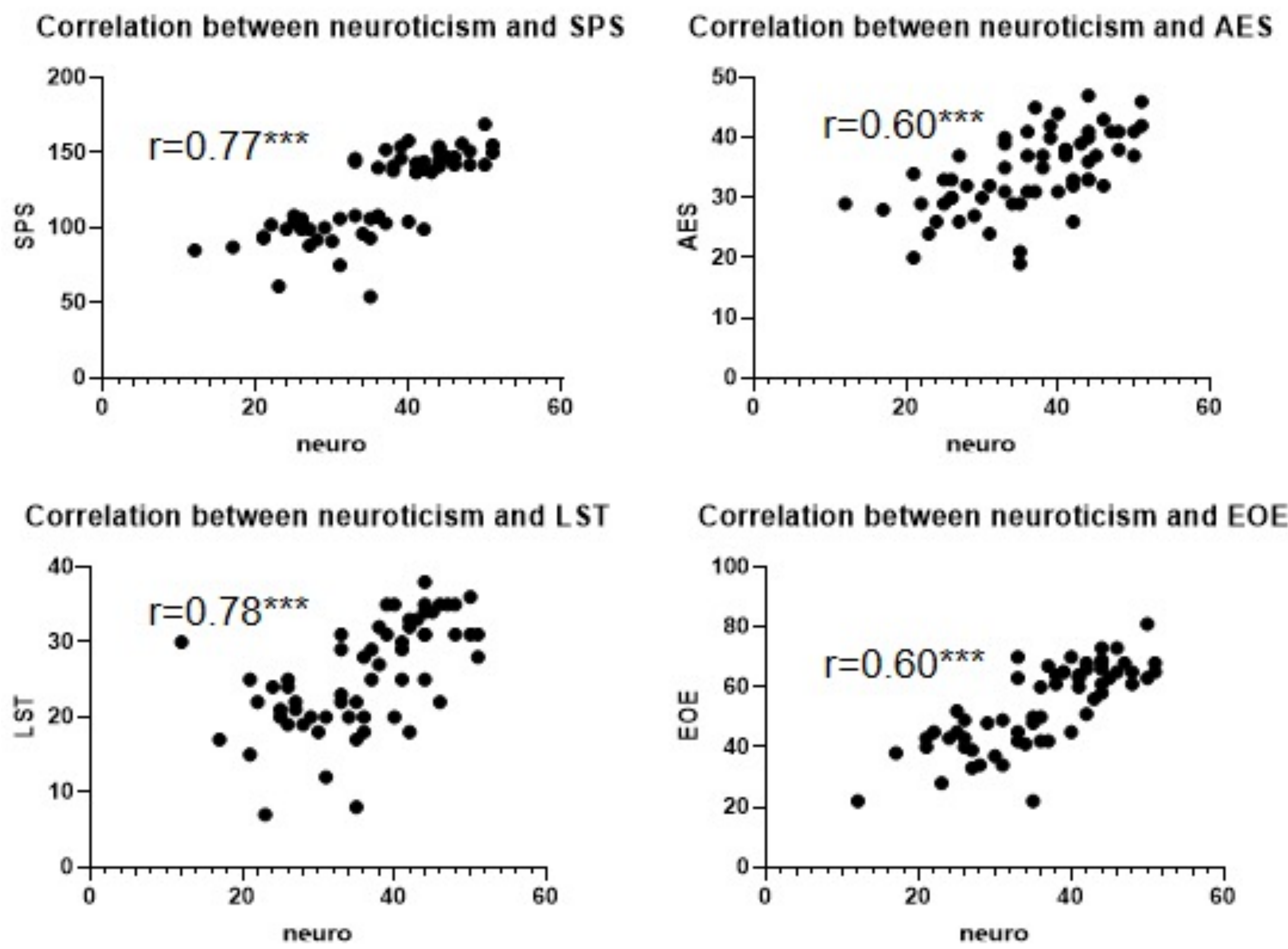
3 Materials validation

The results of the emotional valence rating of three emotional materials including pictures, sound and videos, indicated our selected materials is valid in emotional valence. All participants reported higher valence ratings to positive picture, sound and video than each of negative ones.

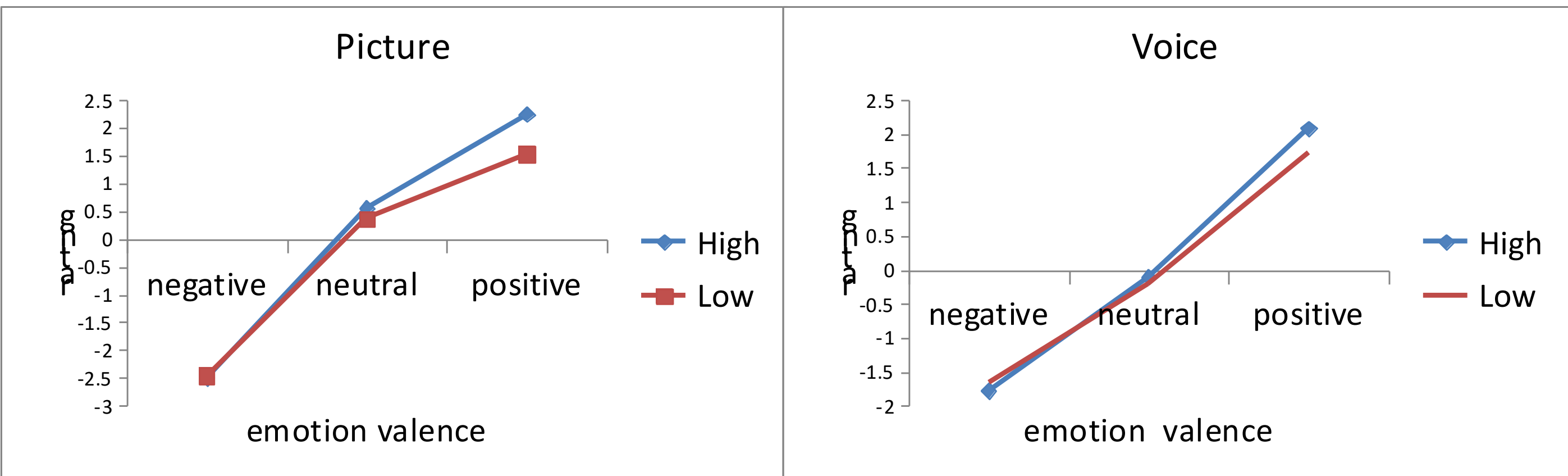


4 Result and Disscussion

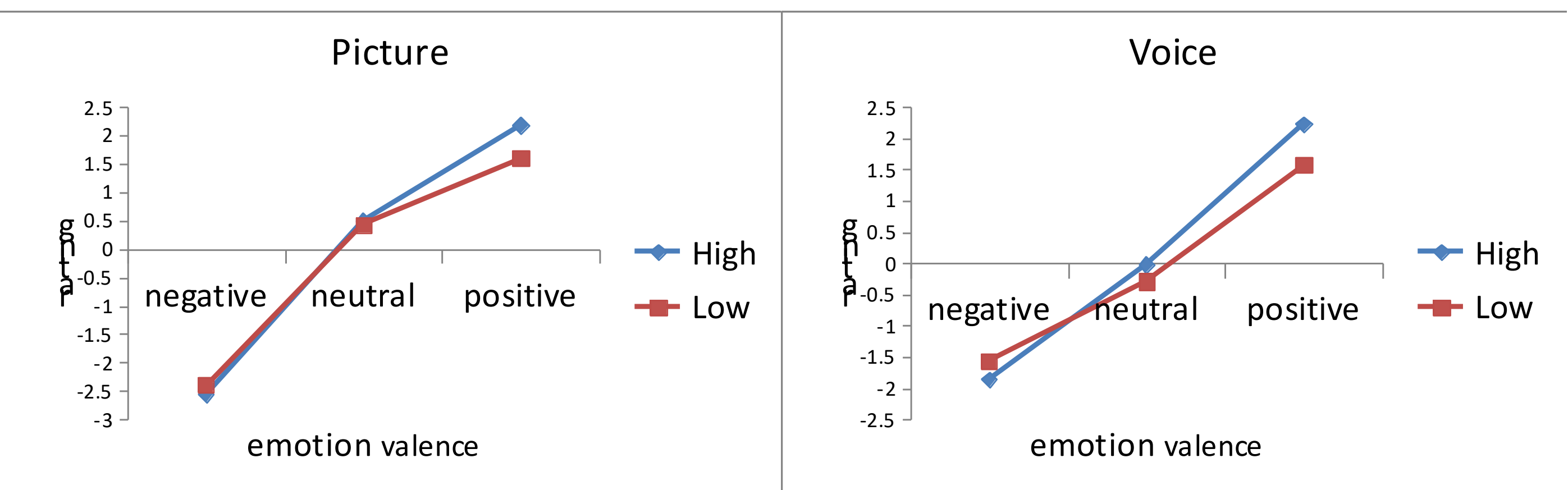
HSPS is analyzed as a single structure, and a three component structure consisting of Aesthetic Sensitivity (AES), Low Sensory Threshold (LST), and Ease of Excitation (EOE). All of them are highly correlated to neuroticism.



After controlling the neuroticism trait, during the Voice Rating Task and Picture Rating Task, High SPS group rated negative stimuli as more negative and positive stimuli as more positive than the low SPS group did, but not for the videos.



Similarly, after controlling the neuroticism trait, during the Voice Rating Task and Picture Rating Task, High AES group rated negative stimuli as more negative and positive stimuli as more positive than the low AES group did.



5 Conclusion

Consistent with previous studies, our finding supports the theory of environmental sensitivity, SPS is a trait independent of neuroticism, and high SPS individuals respond more strongly to emotional stimuli— for both positive and negative.

Importantly, SPS can be considered as a whole, but also note that it can be divided into more than one dimension in the future.

References

- [1] Greven et al., Neurosci Biobehav Rev, 2019
- [2] Acevedo et al., Clinical Neuropsychiatry, 2017
- [3] Acevedo et al., Brain Behav, 2014
- [4] Aron & Aron, J Person and Soci Psych, 1997