



Discrimination of facial expressions in patients with Parkinson's disease

Chia-Yao Lin¹, Li-Chuan Hsu^{1,2}, Chon-Haw Tsai^{2,3}, Yi-Min Tien⁴

¹Graduate Institute of Neural and Cognitive Sciences, China Medical University, Taichung, Taiwan;

²School of Medicine, China Medical University, Taichung, Taiwan;

³Neuroscience Laboratory, Department of Neurology, China Medical University Hospital, Taichung, Taiwan;

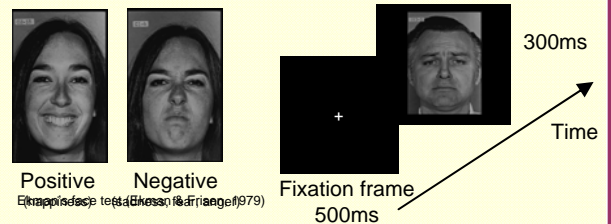
⁴Department of Psychology, Chung Shan Medical University, Taichung, Taiwan



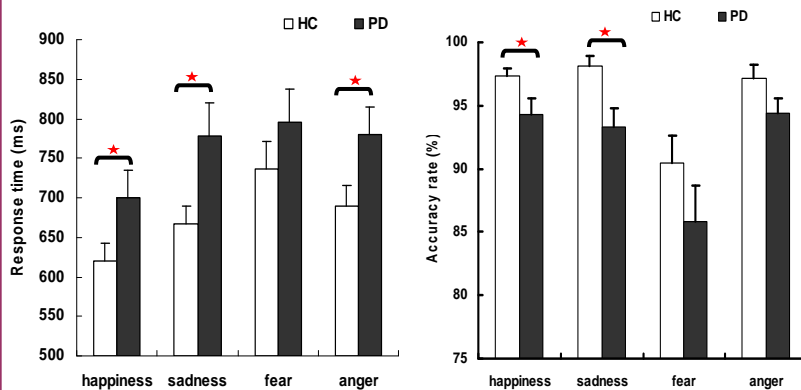
- Previous studies suggested that patients with Parkinson's disease (PD) could not recognize negative facial stimuli correctly, but these results were not generally accepted.
- Possibly confounding variables are the presentation time of target faces and the severity of PD motor deficits.
- In the present study, we adopted a fast emotional discrimination task (FEDT) to investigate the performance of PD patients in discriminating emotional facial expressions.
- Face discrimination in FEDT is more similar to that in the

- We also investigated whether PD's performance in FEDT was related to the severity of motor deficits.

Fast Emotional Discrimination Task (FEDT)



Experiment 1 (PD vs. HC)

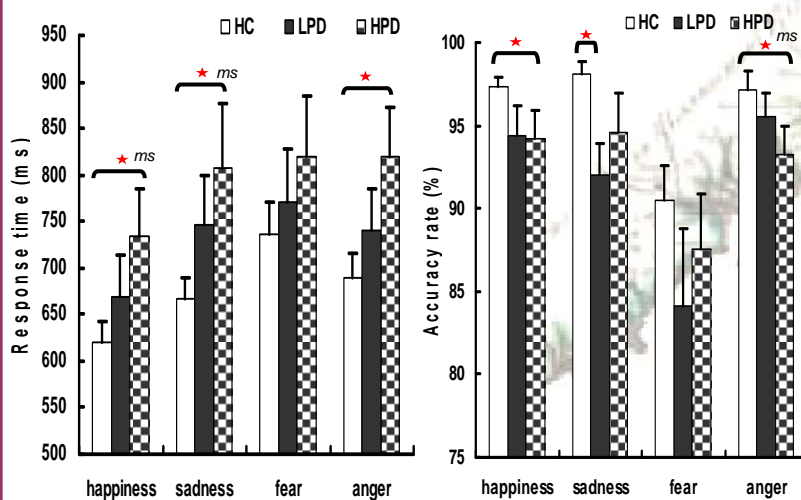


- Participants:

	AGE	BDI-II	MMSE
PD (n=28)	61.68	11.61	27.61
HC (n=28)	57.39	2.93	28.29

- PD patients took longer to discriminate happy, sad and angry faces than healthy controls (HC).
- PD patients also were less accurate in discriminating happy and sad faces compared to HC.

Experiment 2 (PD with different severity of motor deficits vs. HC)



- Participants:

	AGE	BDI-II	MMSE	UPSRD III
HC (n=28)	57.39	2.93	28.29	.
PDs with lower motor score (n=14)	60.50	7.93	28.14	25.07

PDs with higher motor score (n=14)	62.86	15.29	27.07	49.71
------------------------------------	-------	-------	-------	-------

- PD patients with less severe motor deficits discriminated sad faces less accurately than HC.
- Compared to HC, PD patients with greater motor deficits responded more slowly to happy, sad and angry faces and also were less accurate in discriminating happy and angry faces.

Discussion and Conclusion

- To our knowledge, our study is the first to find that PD patients have selective deficits in discriminating positive faces.
- Motor deficits in PD patients impair the discrimination of facial expressions with discrimination getting worse as the motor deficit becomes more severe.

Acknowledgment: Supported by National Science Council of Taiwan, 100-2410-H-039-001-MY2; E-mail: lchsu@mail.cmu.edu.tw