EYE MOVEMENTS PATTERNS DURING FACIAL EXPRESSION RECOGNITION IN MALE AND FEMALE OBSERVERS

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Recognition of facial expression is one of the factors ensuring a person’s social competence. It is a known that women cope with this task somewhat more successfully than men (McClure, 2000). This may occur because women and men could rely on different mechanisms of face perception, namely females are more successful using feature-based processing and extraction of second-order relations (the distances among face features) so than males. The question of facial expression recognition mechanisms and their universal or gender-specific character is on the day’s agenda. We studied recognition of facial expression in female and male adults using eye-tracking technology.

Method

Participants: 53 subjects (28 F, average age of 20.2 years), the study was performed on Azerbaijani sample; all participants were students of Lomonosov Moscow State University’s Baku branch.

For **stimuli** we used the images of four adults (2 men, 2 women) from the Warsaw Set of Emotional Facial Expression Pictures (Olszanowski et al., 2015). Firstly, we morphed the emotional images of one man and one woman with neutral images of the same person. Secondly, the images of all characters were inverted horizontally. Lastly, the eye and mouth zones of inverted stimuli were inverted again horizontally so form M. Thatcher illusion.

Procedure: During the experimental procedure the subject was presented with a stimulus for 600 ms and after that, he had to click a mouse to choose the correct emotion for the depicted expression.

Results

We used two types of data: **response accuracy** and **eye tracking records**. To compute the eye tracking data we split faces in 5 areas of interest (AOI).

Then, we calculated the **fixation count** in every AOI for each type of stimuli.

- We did not find accuracy decrement and found only few differences in eye movement strategies. This indicates that there is no differences in eye movements patterns during facial expression recognition in male and female observers.
- In addition, we can conclude that differences in the strategies of eye movements do not reflect differences in the perceptual mechanisms used.

Accuracy decrements caused by inversion ($p= .275$) and by Thatcherization ($p= .380$) between male and female participants was not significant. Therefore, there were no differences in holistic and feature-based processing between men and women.

Two gender groups showed some differences in **eye movements patterns**. Women, compared to men, fixated more frequently on both eyes, independently of presentation conditions. In distorted stimuli, differences between genders remain only in the area of the right eye.

Right eye			
	No	Re	Te
U Mann - Whitney	177711,5	178913,5	176517,0
Sig. (2-tailed)	,000	,000	,000
Left eye			
	No	Re	Te
U Mann - Whitney	165183,5	213541,0	219339,5
Sig. (2-tailed)	,000	,056	,297