The Difference of Perception of Facial Emotions for People with Different Ages

Sayyara Hasanli, Izmir University of Economics, Turkey

iafor

The International Academic Forum
www.iafor.org

INTRODUCTION
Emotions are an incredibly important aspect of human life and basic research on emotions of the past few decades has produced several discoveries that have led to important real world applications. Facial emotions are perceived by different people in different way. Possibility to read facial expressions is getting hard with the age. More decrease happens with the 'happiness' emotions than other expressions. Previous studies showed that Youngers better recognize happy face than others. Joakim Svärd, Stefan Wiens and Håkan Fischer in their experiment show that across age groups, recognition performance for happy faces was better than for neutral face. David Richter, Cathrin Dietzel and Ute Kunzmann showed that younger women were better at recognizing sadness and anger than older women. It has been widely demonstrated that older adults have more difficulty than young adults in identifying negative social emotions (such as anger and sadness; Brosgole & Weisman, 1995; Calder et al., 2003; Keightley, Winocur, Burianova, Hongwanishkul, & Grady, 2006; Ruffman et al., 2008). Isaacowitz et al., 2007 found that facial expressions seem to decrease with age, the absolute performance level for happy faces is preserved; Ruffman et al., 2008 argued that decrease in performance with age also in recognition of happy faces. Older adults performed worse than younger adults in recognition of all facial expressions except for faces displaying disgust. Mather and Carstensen, 2005: recognition performance for happy faces seems to be relatively preserved in older adults, which is in line with the notion of a shift of focus toward positive, and away from negative information with advancing age. In my experiment I'm going to figure out if facial emotions are really hard to read with the age in general.

MATERIALS AND METHODS
PARTICIPANTS
The sample consisted of 30 older (19 women and 11 men), 26 adult participants (19 women and 7 men) and 30 children. Mean age was **23.2** years for adults, **27.3** years for younger men, **71.5** years for older people, and **13.4** years for children.

MATERIALS
25 gray scale pictures of faces depicted 10 individuals, each displaying anger, sadness, disgust, happiness and neutral facial expressions (Ekman 1976). 18 of the identities were female, and 8 were male. 25 masking pictures were generated by scrambling the 30 original pictures. Each original was 160x160 pixels. They were presented on a standard 15.6-inch monitor.
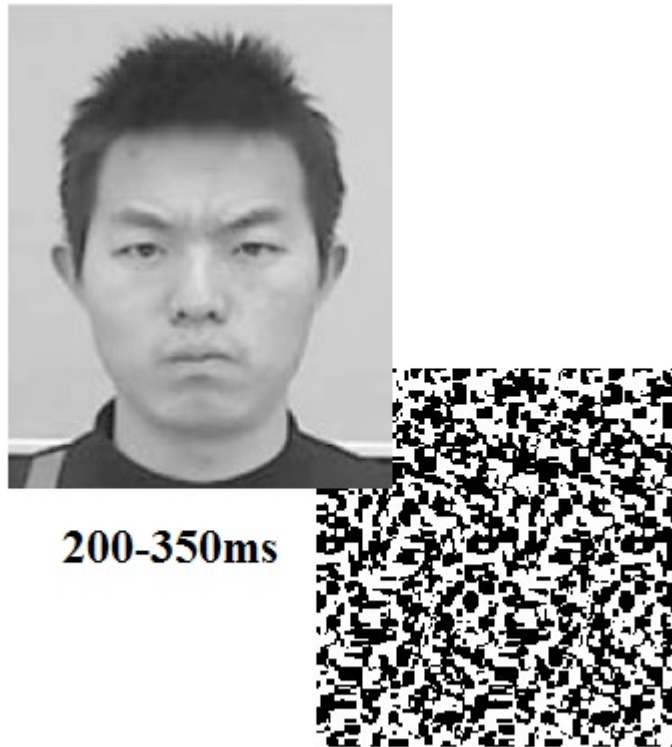
PROCEDURE
The experiment consisted of two parts: First – Adaptation part of experiment: After running experiment, participants first see the blank page which lasts 1000ms, after which Instruction 1 appears. This step is an adaptation step, here they need to learn the position of each button and it will help them to quickly response in the second part of the experiment. I present the same words – angry, sad, disgust, happy and neutral – in the center. This words stay in the screen until they give a response. For the adaptation participants receive these words 40 times (each words 8 times). For each wrong answer they need to answer to this trial again.
Second part of experiment: real experiment. In the second instruction I ask participants to determine whether it is angry, sad, disgust, happy or neutral face. As i mentioned before these stimili are presented in both sides randomly. But before these

stimuli there is a fixation point to which participants need to concentrate their attention. Unmasking is required to prevent afterimage effect.
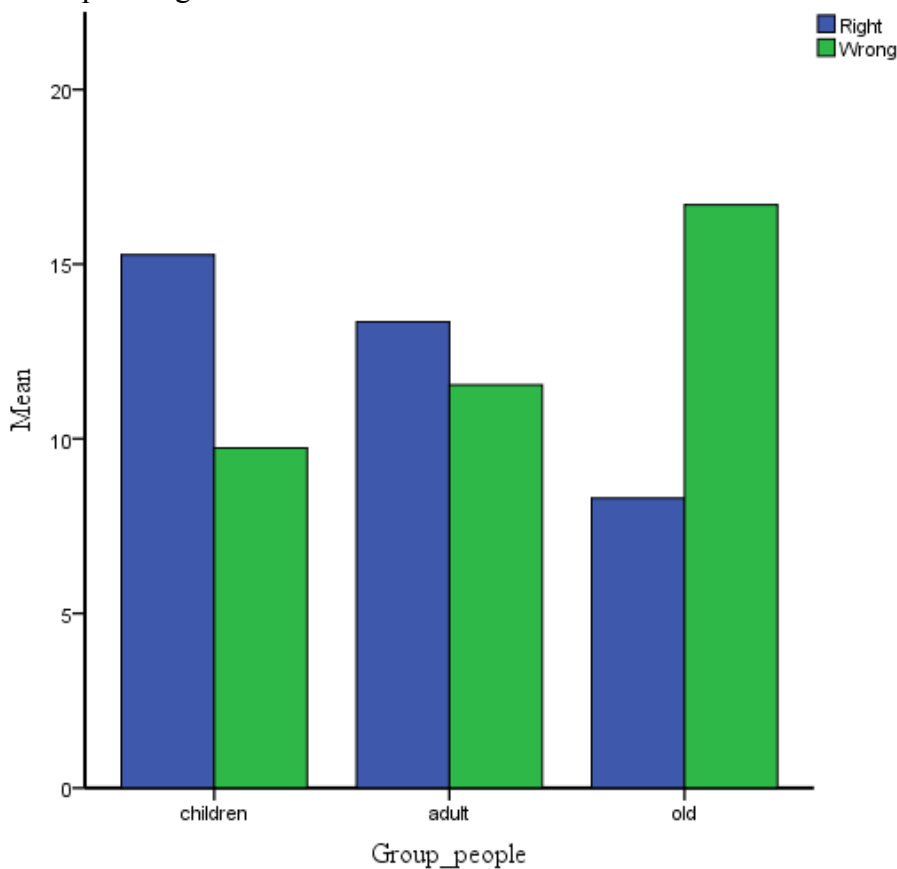

FIGURE 1|Example of the stimulus presentation

RESULTS

Our goal was to study whether it's getting hard to recognize facial emotions as people gets older or not. We measured right and wrong answers of each 86 participants. The results show that the mean of 'Right' answer for *children* was 15.27, for *adult* 13.35, whereas for *old* it was only 8.30. We can clearly see that there wasn't significant difference between the scores of adult and children. In contrast, *Old* people rated almost twice less than children. In the 'wrong' category, children made less mistakes than the other two group of people. And again, there is non-significant difference between children(M=9.73) and adults (M=11.54). Old people made more mistakes, M (16.70).

Our bar chart helps us to see these differences. The number of correct answers decrease as people gets older. And in contrast number of incorrect answers increases when a person gets older.

For *right* variable, Kolmogorov-Smirnov test D shows not-significance value .200 for children (D=.098) and for old people (.200) (D=.120), $p > .05$, and significant value (.027) for adult (D=.182), $p < .05$. The results are the same for the *wrong* variable. We can assume that our data is normally distributed. $F (2, 83) = 2.47$ for right answer, $F (2, 83) = 2.75$ for wrong answer.

Pearson correlation shows us a perfect negative linear relationship between our variables, $r = -.997$; 95% CI [-1.000; -.989]

After all analysis, we can say that in fact, it is difficult to read facial emotions for the people with the age of 55+. We saw also that there is difference between children and adult. But these differences are not significant.

REFERENCES

Joakim Svärd, Stefan Wiens and Hakan Fische - Superior recognition performance for happy masked and unmasked faces in both younger and older adults

Isaacowitz DM[1], Löckenhoff CE, Lane RD, Wright R, Sechrest L, Riedel R, Costa PT - Age differences in recognition of emotion in lexical stimuli and facial expressions.

Aire Mill, Juri Allik, Anu Realo, and Raivo Valk - Age-Related Differences in Emotion Recognition Ability: A Cross-Sectional Study