Emotion Recognition for Familiar Versus Stranger Dynamic Faces: Age and Gender Matter

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Older adults are less accurate than young adults at recognizing facial expressions of emotion (Ruffman et al., 2008). However, past studies typically used static photos of strangers. We sought to determine whether age differences in emotion recognition accuracy could be attenuated if the stimuli were dynamic facial expressions of familiar partners. Young and older adult couples participated in two sessions. First, their facial expressions were recorded while they watched emotional film clips. In a second session, participants tried to identify the facial expressions of their partner and a same-age stranger. Using video as unit of analysis, all participants were better at recognizing familiar partners than strangers. Gender, emotion, and familiarity interacted with age in determining emotion recognition accuracy. However, despite older adults’ improvement in accuracy in the familiar condition, age differences still remained for some emotions. These results suggest that older adults’ emotion recognition difficulties extend to their close romantic partners.

METHOD (continued)

Participants
n = 40 Young Adults (53% female; 18-30 years)
37 Older Adults (49% female; 60-80 years)

Design
2 Between-Subjects Factors
Age Group: Young, Old
Gender: Male, Female

2 Within-Subjects Factors
7 Emotions: Anger, Disgust, Fear, Happy, Sad, Surprise, Neutral
Condition: Familiar Partner, Stranger

Encoding Session
Recruited young and old romantic couples who were in an exclusive relationship for ≥ 3 months. Facial expressions were video-recorded during emotion-eliciting film clips validated clips recommended by Ruffman, Ray, & Gross, 2007

Mood Induction Stimuli – Film Clips

Before and after each film clip participants indicated:
The emotion they felt the most + intensity (0-8)
Other emotions they felt + intensity (0-8)
Videos were coded and edited into short clips (~30 s each) of facial expressions.

Decoding Session
Participants returned 2-8 months after the Encoding Session. Identify the facial expressions of their partner and a same-age stranger. Saw each facial expression clip twice. Single forced-choice response.

Analytic Approach
Because items (videos) varied between participants, we analyzed the data in two ways:
1. Video as unit of analysis: Was each video better identified by a familiar judge or stranger judge?
2. Generalized linear mixed model, crossed random effects (R lm4)
Model included by-subject and by-item (Quality) random intercepts.

RESULTS (continued)

Condition differences significant at: +p < .06; * p < .05.
Greenhouse-Geisser corrections used due to violation of sphericity. Bars represent standard error of the mean.

CONCLUSIONS
We found 1) improvement in emotion recognition for familiar partners (compared to strangers) for all emotions except anger and fear, and 2) age-related deficits in emotion recognition for both familiar and unfamiliar partners. Furthermore, the gender and age of the perceiver influenced which emotions were better recognized in familiar partners than strangers. Interestingly, older females were the only group not to exhibit a familiarity advantage for disgust recognition. This may be evidence of motivated inaccuracy to protect the relationship (e.g., Simpson et al., 1995). Future work should investigate whether these age by gender effects are related to the age and gender of the expresser. It would also be interesting to examine the relationship between emotion recognition accuracy and relationship well-being and longevity. Overall, when spontaneous dynamic stimuli are used, both the ecological validity and the difficulty of the task appear to increase, but familiarity does not mitigate age differences.