

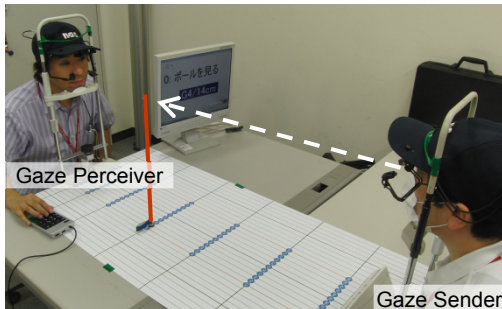
## You may feel your eyes meet with others ~Determining factors related to the eye-contact perception area~

### Abstract

Even though people may feel they are making eye-contact with others, nevertheless the eyes of others are not actually gazing at their eyes. For example, people mistakenly believe that eye-contact is established when a partner is gazing at their nose. We found that eye-contact perception not only depends on the partner's physical eye direction but also such psychological factors as **Individual social anxiety** and situational factors, including **partner's gender**. We expect to apply our findings to video communication systems, where users sometimes feel difficulty to hold their eye-contacts, so that users can naturally use eye-contact. Our findings may also reduce gaze phobia by elucidating why people focus on the gazes of others.

**Purpose** Gaze perception is related to social anxiety (individual trait) and partner's gender (situational trait). We examined their relation to deepen our understanding of communication by eyes.

### Method



**Eye-contact perception area** are the points where gaze perceivers answered: "Sender might be gazing at me." Nevertheless **the sender is actually gazing at the pole**.

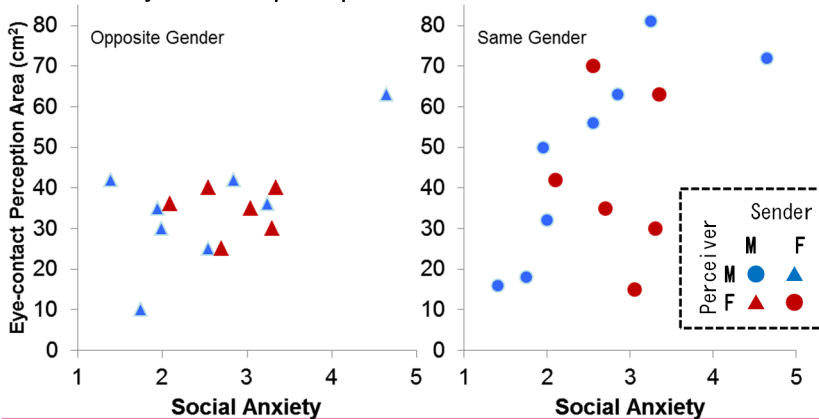
- A pole was placed in front of the perceiver. For each trial, pole positions were changed by 20 x 20 points 2 cm around center of perceiver's eyes.
- Sender gazed at **pole** or **perceiver's eyes**.
- Perceiver answers to which the Sender is gazing.

**Social Anxiety** is a individual trait that indicates discomfort from gazes of others. It was measured with questionnaires.

**Same two persons of both gender** engaged in entire experiment as a gaze sender to investigate partner's situational traits.

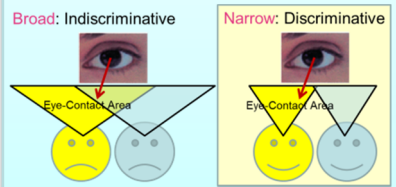
### Results

Both social anxiety and partner gender affected eye-contact perception area.



**Effective perception area may depends on situation.**

- (1) Over-sense for risk aversion, e.g., escape from enemies, social interaction (social anxiety)
- (2) Restrict for avoiding interference, e.g., discrimination of attention.



### Related work

[1] M. Matsuda, M. Honma, R. Ishii, S. Kumano, K. Otsuka, J. Yamato, "An Exploratory study of sexual difference of volume of Eye-contact perception: Effects of participants' social anxiety and sex of the peer," *IEICE Technical Report*, Vol. 112, No. 1, pp. 77-82, 2013. (in Japanese)

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