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Eye contact activates the autonomic nervous system even during video calls

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Source: University of Tampere

Summary: A new study found that eye contact during video calls can elicit similar psychophysiological responses than those in genuine, in-person eye contact.

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FULL STORY

A new study from Tampere University in Finland found that eye contact during video calls can elicit similar psychophysiological responses than those in genuine, in-person eye contact.

Videoconferencing has become more commonplace than ever. Particularly now as the coronavirus pandemic limits social interactions, people are relying on video calls to connect with friends and family and to work from home. Though a mere video call cannot fully replace the in-person contact to which most of us are accustomed, a new study suggests that our affective responses to another's eye contact may be quite similar during video and in-person interaction.

The recently published study investigated physical reactions to eye contact in various situations. The researchers compared the reactions caused by seeing another person's direct and averted gaze in three situations: in-person interaction, a video call and just watching a video. In these situations, they measured the participants' skin conductance and activation of facial muscles. Changes in skin conductance reflect the activation of the autonomic nervous system, which is an indicator of affect, whereas the activation of facial muscles reflects the positivity or negativity of the affect.

Corroborating previous studies, in-person eye contact was found to elicit a heightened autonomic arousal response. More importantly, this eye contact effect was also observed when the other person was seen over a bidirectional video call. When the other person was only seen on video, direct gaze, in contrast, did not similarly activate the autonomic nervous system. In addition, direct gaze was found to induce facial reactions associated with positive emotion in all three situations. In other words, the mere perception of direct gaze activated the zygomatic or "smile" muscles and relaxed the corrugator or "frown" muscles.

"Our results imply that the autonomic arousal response to eye contact requires the perception of being seen by another. Another person's physical presence is not required for this effect," says Jonne Hietanen, the first author of the study.

"Unexpectedly, we also found that even when the other person was presented just on video, seeing direct gaze elicited the subtle facial reactions of smiling. This suggests that these facial reactions are highly automated responses to eye contact," Hietanen continues.

The results have implications for the use of video calls in everyday situations, even though the researchers caution against too far-reaching conclusions.

"Most present-day applications do not permit direct eye contact as the other person is usually seen with a slightly averted gaze. Therefore, it is not clear whether these affective similarities between in-person and video call interactions extend to the use of applications such as Skype," Hietanen adds.

Story Source:

Materials provided by **University of Tampere**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Jonne O. Hietanen, Mikko J. Peltola, Jari K. Hietanen. **Psychophysiological responses to eye contact in a live interaction and in video call**. *Psychophysiology*, 2020; DOI: 10.1111/psyp.13587

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