

Human eye contact found to be very quick and pupil dilation an indicator of preferred mutual gaze duration

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Credit: George Hodan/public domain

(Medical Xpress)—A team of researchers with University College London has found that the average amount of time people gaze into each other's eyes, in non-romantic settings, is remarkably short. In their paper published in *Royal Society Open Science*, the group describes experiments they carried out with volunteers and eye gazing and what they learned as a result.

Most animals use gazing as a form of communication, many use looking into the eyes of another as a way to signal a threat, or of interest. In humans, [eye](#) gazing has clearly been seen as a means of communication, the researchers note, though very little research has been conducted on the behavior, other than to use it as a form of diagnosis of mental impairments such as schizophrenia or autism. In this new effort, they sought to learn more about what they call preferred gaze duration (PGD)—the amount of time people feel is appropriate for a gaze. Shorter or longer gazes, they note, tend to cause people to feel uncomfortable or confused.

To learn more, they got 498 visitors to the London Science Museum to submit to a simple and relatively short test—to sit at a device with their chin on a rest (to prevent head movement), looking into a video screen. On the screen, actors were shown looking back at them. In the videos, the actors gazed back into the eyes of the volunteers for different lengths of time, and the volunteers were asked to push a red button when they felt the gaze had become uncomfortable. As the volunteers watched the actor on screen, their faces were recorded and their eye movements were tracked, as was the degree of pupil dilation.

In analyzing the video and data, the researchers found the average PGD to be just 3.3 seconds, though there were some extreme deviations. They also found that those people who wanted to engage in eye contact, such as those who were physiologically aroused, experienced pupil dilation, and of those people some also preferred longer eye contact—in such

cases the dilation occurred faster than with those that were not seeking longer eye contact. The dilation was too subtle, the researchers report, to be seen by the casual viewer, they had to watch the action in slow motion.

More information: Nicola Binetti et al. Pupil dilation as an index of preferred mutual gaze duration, *Royal Society Open Science* (2016). [DOI: 10.1098/rsos.160086](https://doi.org/10.1098/rsos.160086)

Abstract

Most animals look at each other to signal threat or interest. In humans, this social interaction is usually punctuated with brief periods of mutual eye contact. Deviations from this pattern of gazing behaviour generally make us feel uncomfortable and are a defining characteristic of clinical conditions such as autism or schizophrenia, yet it is unclear what constitutes normal eye contact. Here, we measured, across a wide range of ages, cultures and personality types, the period of direct gaze that feels comfortable and examined whether autonomic factors linked to arousal were indicative of people's preferred amount of eye contact. Surprisingly, we find that preferred period of gaze duration is not dependent on fundamental characteristics such as gender, personality traits or attractiveness. However, we do find that subtle pupillary changes, indicative of physiological arousal, correlate with the amount of eye contact people find comfortable. Specifically, people preferring longer durations of eye contact display faster increases in pupil size when viewing another person than those preferring shorter durations. These results reveal that a person's preferred duration of eye contact is signalled by physiological indices (pupil dilation) beyond volitional control that may play a modulatory role in gaze behaviour.

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