

Wide-eyed fear expressions may help us—and others—to locate threats

1 May 2013

Wide-eyed expressions that typically signal fear may enlarge our visual field and mutually enhance others' ability to locate threats, according to new research published in *Psychological Science*, a journal of the Association for Psychological Science.

The research, conducted by psychology graduate student Daniel Lee of the University of Toronto with advisor Adam Anderson, suggests that wide-eyed expressions of fear are functional in ways that directly benefit both the person who makes the expression and the person who observes it.

The findings show that widened eyes provide a wider visual field, which can help us to locate potential threats in our environment. But these widened eyes also help to send a clearer [gaze](#) signal telling observers to "look there," which may enhance their ability to locate the same threat, as well.

"[Emotional expressions](#) look the way they do for a reason," says Lee. "They are socially useful now for communicating [emotional states](#), but this new research suggests that they were also useful as raw physical signals."

Lee and colleagues found that participants who made wide-eyed fear expressions were able to discriminate [visual patterns](#) farther out in their [peripheral vision](#) than were participants who made neutral expressions or expressions of [disgust](#).

Next, they investigated the benefits that wide-eyed expressions might confer to onlookers.

The researchers found that participants were better able to tell which direction a pair of eyes was looking as the eyes became wider. And wider eyes helped participants respond to targets that were located in the direction of the gaze. Importantly, these benefits did not depend on recognizing the eyes as fearful.

So why are wide-eyed expressions so helpful for onlookers?

As eyes become wider, we see more of the whites of the eyes, known as sclera. Lee and colleagues hypothesized that this could increase the contrast with the irises that signal the gaze, making it easier to tell where someone is looking. Indeed, their data revealed that iris display and higher iris-to-sclera contrast were correlated with faster response times.

Lee believes that this research demonstrates just how social we are wired to be:

"Our ability to process other people's eye gaze is already finely-tuned; the fact that this processing is further enhanced by expressive eye widening underscores the importance of our eyes as social signals."

Provided by Association for Psychological Science

APA citation: Wide-eyed fear expressions may help us—and others—to locate threats (2013, May 1) retrieved 3 May 2021 from <https://medicalxpress.com/news/2013-05-wide-eyed-usand-othersto-threats.html>

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