

# Increased use of hand held devices may call for new photo guidelines

June 13 2012

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Viewing Facebook and Flickr photos on a smart phone are becoming common practice. But according to a recently published *Journal of Vision* study, pictures on the small screen often appear distorted. Vision scientists found that perceptual distortions occur because picture takers do not take their viewing distance into account.

The researchers propose the use of longer focal lengths -- 100mm -- to create content that is viewed on the small screens of [mobile devices](#). Shorter lengths -- 50 mm -- should be used for photo images used on larger devices, such as a television.

"Our research suggests that long-standing guidelines for how to select the best lens likely developed as a way to compensate for the shortcomings in our brain's ability to perceive the scenes shown to us in pictures," said author Emily Cooper of Helen Wills Neuroscience Institute, University of California, Berkeley. "By better understanding how lenses affect our [perception](#), we were able to provide significantly improved guidelines for creating effective pictures."

The [investigators](#) conducted two experiments with [young adults](#) to measure the effect of focal length on perceived depth in a pictured scene, and to measure the preferred viewing distance for pictures of different focal lengths, magnifications and print sizes. Results showed that when looking at pictures, the participants' preferred viewing distance led them to view long focal length pictures — those with higher magnification and a narrower angle of view — from too near.

Conversely, the study [participants](#) preferred viewing shorter focal length pictures — those with a wider angle of view — from too far.

Based on the results, the research team agrees that following the general rule of thumb of using a 50 mm lens will greatly increase the odds of looking at a photograph from the correct distance and not distort the image. However, because people tend to view small pictures from about 30 cm, the researchers recommend a focal length that is much longer to accommodate for small picture sizes such as those on a mobile device.

Cooper and her colleagues hope these guidelines will enable picture creators to have better control over how their pictures look when viewed in different formats. "There are many new innovations in display technology," she adds. "With stereo 3D and high dynamic range displays becoming more commonplace, our future research will be focused on understanding the potential gains and pitfalls of these types of pictures and displays.

Provided by Association for Research in Vision and Ophthalmology

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