

Filmmakers just know how to help you read on-screen emotions

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Movie makers implicitly know how important it is to be able to read someone's expression, and that distance influences how easy this is done. This explains why close-ups of an actor appear on screen for shorter periods than shots in which the person's face is smaller and is surrounded by distracting objects, according to a study by James Cutting and Kacie Armstrong of Cornell University in the US, published in Springer's journal *Attention, Perception, & Psychophysics* . They argue that the craft of popular movie making relies on psychological principles about how much humans can absorb and comprehend.

Psychologists often study the [perception](#) of facial expressions and objects at a distance, but not necessarily how perception and distance interact. The authors set out to examine this interaction within the context of popular movies. They conducted four separate studies. In two of them, they empirically investigated the structure of 24 popular drama, comedy or action movies shot between 1940 and 2010 . They looked at the shot duration in various scene shots as well as the relative size of a focal character within each of these frames, i.e. shot scale. Six of the more modern films were analysed to see how contemporary movies accommodate scale and clutter. Two other experiments explored the time it took 21 participants to categorize different facial expressions in a set of 330 static movie images of various visual sizes. The participants had to make snap decisions about whether the characters pictured were experiencing positive (such as joy) or negative (such as anger) emotions.

The researchers found that, unsurprisingly, faces which appear smaller

on screen take longer to categorize than those that are larger on screen or in an image because [facial expressions](#) are harder to read as distance increases. This pattern goes hand in hand with the level of local background clutter. More clutter creates crowding and makes it more difficult for the viewer to interpret expressions on more distant faces. Cutting and Armstrong suggest that filmmakers at least tacitly know and employ these principles. Close-up shots in contemporary movies can be up to three seconds shorter than ones in which a small face appears at a [distance](#). In addition, the length of a shot depends on how cluttered a scene is. In shorter close-ups, for instance, the focus is on someone's face. This leaves the background blurred and therefore less cluttered, leaving more room to read an expression.

"Although filmmakers' knowledge about their craft often is tacit rather than explicit, they understand that visual clutter impedes recognition, and that the longer-scale cluttered shots often must have even longer durations than they might otherwise have had," says Cutting.

"The craft of popular moviemaking is based on hard-won, practice-forged, psychological principles that have evolved over a long time, fitting stories and their presentation to our cognitive and perceptual capacities," adds Armstrong, who suggests that professional psychologists can learn much from studying the structure of filmmakers' products.

More information: James E. Cutting et al. Facial expression, size, and clutter: Inferences from movie structure to emotion judgments and back, *Attention, Perception, & Psychophysics* (2016). [DOI: 10.3758/s13414-015-1003-5](#)

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