What Makes a Movie Interesting? The Psychology Behind Filmmaking

By Vivian Jiang

On Sunday evening, millions will tune in as celebrities strut down the red carpet and this year’s top-rated films secure awards. Celebrating productions like the culturally iconic Black Panther to the artistic and moving Roma, awards season reaches its climax with the Academy Awards. But what do all these Oscar-worthy movies have in common? And why do popular movies capture the attention of viewers?

The answers to these questions might lie in the connection between movie structure and brain chemistry. Prof. James Cutting, psychology, studies how popular movies have evolved and how their evolution relates to visual perception.

According to Cutting, filmmakers have adapted their techniques over the years to keep up with technological advances and changes in viewer psychology. One adaptation that Cutting has researched is the progressive shortening of shot lengths in movies.
This change has been driven by a phenomenon known as the Flynn effect, Cutting said. According to a 2014 paper, the Flynn effect refers to the rise in IQ scores over time, possibly caused by environmental factors or the IQ measurement methods.

These rising IQ scores indicate higher levels of visual processing, allowing filmmakers to fit more action into shorter shots. “The reason [we can make] the shot durations shorter is that we pick up the information better,” Cutting said.

Another aspect of moviemaking that Cutting has noticed in his research are fractal patterns — shapes in which each part looks similar to the whole — that can repeatedly be found in 150 popular movies released over the last 70 years.

Aside from their visual use, fractals also appear in time. Fractals in time refer to certain moments that are repeated on a larger scale, like patterns in scenes that repeat throughout the movie.

Cutting has studied these fractals in time, making time series of movies where series of data are collected at successive time intervals. Cutting measured factors in the data series like shot lengths, luminance — brightness of each pixel within a shot — and movement.

After analyzing and plotting these time series, Cutting found that many popular movies released from 1915 to 2015 exhibited fractal-like behavior. For instance, Cutting plotted shot durations in Back to the Future and found that the resulting waveform showed a repetitive fractal-like pattern.

What’s the effect of this “fractality” in movies? As Cutting explained in his study, fractals can increase the sense of “rhythm” in a movie — filmmakers try to synchronize their movies to the patterns of the viewer’s attention.

Ultimately, Cutting noted, a lot of factors go into the making of a movie, and aspects like a movie’s plot or its actors usually have more of an effect on whether a movie wins an Oscar.

However, variables like shot lengths or fractals can certainly contribute to a movie’s “production value,” Cutting said.

Filmmakers, Cutting explained, are like “amateur psychologists,” constantly trying to adopt new methods to capture an audience’s attention. In the process of doing so, they reveal previously unexplored aspects of visual perception.

As Cutting put it, “one can study the structure of movies and learn quite a lot about the structure of the human mind.”