

Focusing on the Cinematic Mind

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Our household is a rolling Alfred Hitchcock festival. We almost always have at least one of the celebrated director's films on DVD, and over the years we have watched most of our favorites—*Suspicion*, *North by Northwest*, *The 39 Steps*—time and time again. It's a tribute to the master's skills and sensibility that his films have such enduring appeal, because many films from the same time period have a distinctly "old" feel to them. It's not just the primitive cameras and films. There is something about the rhythm and texture of early cinema that has a very different "feel" than modern films. But it's hard to put one's finger on just what that something is.

New research may help explain this elusive quality. Cognitive psychologist and film buff James Cutting of Cornell University decided to use the sophisticated tools of modern perception research to deconstruct 70 years of film, shot by shot. He measured the duration of every single shot in every scene of 150 of the most popular films released from 1935 to 2005. The films represented five major genres—action, adventure, animation, comedy and drama. Using a complex mathematical formula, Cutting translated these sequences of shot lengths into "waves" for each film.

What Cutting was looking for were patterns of attention. Specifically, he was looking for a pattern called the $1/f$ fluctuation. The $1/f$ fluctuation is a concept from chaos theory, and it means a pattern of attention that occurs naturally in the human mind. Indeed, it's a rhythm that appears throughout nature, in music, in engineering, economics, and elsewhere. In short, it's a constant in the universe, though it's often undetectable in the apparent chaos.

Cutting found that modern films—those made after 1980—were much more likely than earlier films to approach this universal constant. That is, the sequences of shots selected by director, cinematographer and film editor have gradually merged over the years with the natural pattern of human attention. This explains the more natural feel of newer films—and the "old" feel of earlier ones. Modern movies may be more engrossing—we get "lost" in them more readily—because the universe's natural rhythm is driving the mind.

What does this mean? Cutting doesn't believe that filmmakers have deliberately crafted their movies to match this pattern in nature. Instead, he believes the relatively young art form has gone through a kind of natural selection, as the edited rhythms of shot sequences were either successful or unsuccessful in producing more coherent and gripping films. The most engaging—and successful—films were subsequently imitated by other filmmakers, so that over time the industry as a whole evolved toward an imitation of this natural cognitive pattern.

Over all, action movies are the genre that most closely approximates the $1/f$ pattern, followed by adventure, animation, comedy and drama. But as Cutting reports on-line in the journal *Psychological Science*, individual films from every genre have almost perfect $1/f$ rhythms. *The Perfect Storm*, released in 2000, is one of them, as is *Rebel Without a Cause*, though it was made in 1955. So too is *The 39*

Steps, Hitchcock's masterpiece from way back in 1935.

For more insights into the quirks of the human mind, visit the [“Full Frontal Psychology”](#) blog at True/Slant. Excerpts from “We’re Only Human” appear regularly in the magazine *Scientific American Mind*. Wray Herbert's book, *On Second Thought: Outsmarting Your Mind's Hard-Wired Habits*, will be published by Crown in September.