

A Numerate Film History? Cinemetrics Looks at Griffith, Griffith Looks at Cinemetrics

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No new machine arrives without its critics. Some will play Luddites; others will say: what your machine can do some other machine I know will do much better; and others ask how relevant what this machine can do is to the field it is designed to work. As luck would have it, in a number of critical debates taking place around the practice (and within the theory) of Cinemetrics the question of relevance has taken center stage. Here is a world-vast, century-long field of film history with its endless variety of genres, styles and subjects, and here a mere curve of digits whose ups and downs are somehow believed to respond to, or even account for, this variety, critics would wonder. To face the truth, some minds of those who work with Cinemetrics, the present authors certainly included, are as much occupied with the purpose and relevance of what we do.

To what extent and up to which limits are shot lengths integral to the making of films and to whatever effect this or that film purports to produce on its viewers? It makes sense, the three of us thought, to go as far back as film history will let us and find out exactly when thinking in feet and seconds becomes part of the filmmaking practice and film-related talk. How long must a shot last in feet and seconds for its duration not to kill a gag, to build suspense, to grab viewers' attention and not to lose it to brevity? Such were the questions raised and debated loudly around the middle of the 1910s on studio sets, in cutting rooms, across trade-papers and screen-writing manuals, and yes, even in Hugo Munsterberg's (now famous) *Psychological Study* conducted in 1916.

As a website, Cinemetrics was launched in 2005. All we did was to apply digital tools to the counting method which Barry Salt had introduced in film studies as early as 1975. Yet it makes sense, from time to time, for us to revisit those who took time to count shots and seconds before Salt. "Photoplays are put on ... with a stop-watch in one hand and a yardstick in the other," two authors of *Writing the Photoplay* informed aspiring free-lance screenwriters in 1913. So, those who want to learn how to write for films should keep watching movies, and watch them armed with tools. "[M]ake a practice of carrying a few small cards, with a line drawn down the middle of each. As the card is held in the hand, mark with a pencil a short stroke on one side for every change of scene [=shot], and on the other side a stroke for each leader [intertitle], letter or other insert – this will serve as a convenient record device."¹

And here is another piece of advice which the wannabe filmmaker would find in another photoplay manual: "The inexperienced writer labors under a handicap, and one that he could overcome in a

¹ Joseph Berg Esenwein and Arthur Leeds, *Writing the Photoplay* (Springfield, Mass.: The Home Correspondence School, 1913), 147; 221.

measure ... if he would take the trouble to count the scenes and note the length of them by consulting his watch as the story is unfolded.”² Catherine Carr said this in 1914. There should have been a grain of sense in her advice, something that explains why today, one hundred years later, we are still counting shots on Cinemetrics.

It was to find that remote source of relevance of what we do, a timeworn kit of practical needs, as it were, which urged early filmmakers to reach for the watch as they watched each other’s movies, that the first Cinemetrics conference held at the University of Chicago last year was called “A Numerate Film History? Cinemetrics Looks at Griffith, Sennett and Chaplin (1909-1917).”³ That that conference proved a success (as it did, according to independent sources) was not only because each of us three presented a well-researched, statistically savvy and boldly argued paper, but also because we managed to enlist the best critic a young methodology could hope for – Tom Gunning, an expert in early Griffith and film history at large, a number-skeptic and a good judge in matters of relevance.

One of us talked about Keystone’s “ten-feet-per-shot” doctrine and its roots in the Biograph cross-cutting; another chronicled Chaplin’s struggle with Keystone’s strictures; and the third of us showed how Griffith’s alleged multi-climax recipe of dramatic tension can be statistically traced in some of his own films and some of more modern ones. It is not our intension to recount our own talks from last March – on-line video-recordings and an excellent conference report created by Zdenko Mandusic and published in the *Moving Image* will serve this purpose better. The aim of this essay is narrower: to tell the story of a polemic which, as all polemic should (but not always) do led us to new research and new results.

As we said, the strategic aim of that conference in March was to historicize the idea behind and the practice of taking cinemetrics measurements. The idea was obviously there. Time scenes as you watch films! – We quoted just two photoplay writing manuals that encouraged their readers to do this; we could quote more authors from the time giving a similar advice. Were there people crazy enough to actually put this into practice?

There were a number, one of the earliest being the Rev. Dr. Elias Boudinot Stockton, who conducted a study in 1912 the aim of which was to compare and assess “the value of long and short scenes.”⁴ To establish this, Stockton spent around 10 hours watching and re-watching one-reel and split-reel pictures exhibited at movie theaters in New York. As an eyewitness testified, “He carries a stop watch, a pocket counting machine, an electric flash lamp and a note book, and he does his work thoroughly.”⁵

² Carr, Catherine (1914) *The Art of Photoplay Writing* (New York: The Hannis Jordan Company Publishers, 1914), 106-7.

³ See more here: <http://neubauercollegium.uchicago.edu/events/uc/Cinemetrics-Conference/>

⁴ Epes Winthrop Sargent, “The Photoplaywright. Scenes and Leaders,” *The Moving Picture World* 13, no. 6 (10 August 1912): 542.

⁵ Ibid

Stockton's study was not entirely unprejudiced. A tendency in American filmmaking which Stockton decided to test and which is said to have worried him a lot was towards increasingly fast cutting. The result of Stockton's expedition was a table that listed the number of shots, intertitles and inserts counted for 25 titles. As almost all films (minus 3 split-reel ones) were of more or less equal length (1,000 feet, roughly, 17 to 15 minutes each if projected at the speed of 16 to 18 frames per second) it was possible for Stockton and Sargent to calculate what they called an "average time length" for each scene. The figure which startled our researchers was the incredible 68 shots squeezed into the single reel of Biograph's 1912 *The Sands of Dee* against an average of 28 shots per reel more typical to the rest of the studios on Stockton's list, six of them American and three foreign.

"To this we heartily say Amen!" – is how the Reverend Dr. Elias Stockton ends his cinematics crusade:

A twenty scene drama is run up to fifty or sixty scenes, with an average time length of from fifteen to eighteen seconds each. Acting is not possible. Clarity of story is not possible. Unfolding of plot is not possible ... Now that three times the proper number of scenes are used to cover up the thinness of Director Griffith's on-the-flap-of-the-envelope stories, everybody's doing it, and strong, vital, gripping plots are shelved in favor of the short story with numerous shifts.⁶

How short is too short? You can hardly establish this without a watch, experimental psychology tells us. It is hardly surprising, then, that one of the first experimental psychologists Hugo Münsterberg was also one of the first scientists to have established the average shot length of a film – as early as 1915, exactly one hundred years ago:

If the scene changes too often and no movement is carried on without a break, the [photo]play may irritate us by its nervous jerking from place to place. Near the end of the Theda Bara edition of *Carmen* [1915] the scene changed one hundred and seventy times in ten minutes, an average of a little more than three seconds for each scene. We follow Don José and Carmen and the toreador in ever new phases of the dramatic action and are constantly carried back to Don José's home village where his mother waits for him. There indeed the dramatic tension has an element of nervousness, in contrast to the Geraldine Farrar version of *Carmen* [1915] which allows a more unbroken development of the single action.⁷

Clerics and psychologists are not people to be easily gainsaid. Neither Hugo Münsterberg's comparative cinematics of two coeval screen versions of *Carmen*, nor the heroic anti-Griffith study undertaken by the Reverend Dr. Stockton caused any objections in the course of the Cinematics conference last March. Objections emerged on a different occasion, when two of our three speakers brought up what we

⁶ Ibid

⁷ Hugo Münsterberg, *A Photoplay: a Psychological Study* (New York, London: D.Appleton and Company, 1916) 45-6

presented as being Griffith's own view of cinematics. We will dwell on two of the said objections in some detail later in this essay – but let us so far repeat what we already said: there is no better blessing for a scholar than a well-aimed, well-placed, razor-sharp objection. It won't let you sleep or rest, and restlessness is a good incentive for new research. But we will return to this a little later; meanwhile, a few words about the apple of discord.

To begin with, we need to adjust the timeframe. So far, we were looking at the 1910s – the second decade of cinema's history and the first decade in the history of cinematics. Griffith, too, was a recent beginner, if already seen as a threat to prudence in filmmaking. "Bitten by the lightning bug" in 1912, (to use a juicy invective from the Reverend Dr. Stockton's diatribe) Griffith went on "the jumping-jack tendencies" of picture cutting (Stockton again) until they exploded in *Birth of a Nation* in 1915 and *Intolerance* in 1916. Let us now shift the focus, leap ten years and land in 1926.

1926 is an important year in the history of cinematics before Salt. Earlier on, numerate critics were looking at Griffith – some in awe, others with apprehension; in 1926, Griffith himself looked at film editing through numbers – and came out satisfied with what he saw. What we are talking about is a little-known essay "Pace in the Movies" published in *The Liberty Magazine* in 1926. A hard-to-find text, "Pace in the Movies" failed to make it to any of the collections of Griffith's interviews and writings and, to our knowledge, remains a blind spot in otherwise sharp-sighted Griffith studies. To change this, and also to make our arguments easier to check, we append to this essay a facsimile copy of Griffith's 1926 essay "Pace in the Movies."

It was "Pace in the Movies" that generated a lively discussion at the first Cinematics conference last March after one of us three attempted to interpret numerically a verbal pace-related sinusoid Griffith conjures up in his essay: "The pace must be quickened from beginning to end. This is not, however, a steady ascent. The action must quicken to a height in a minor climax, then slow down and build again to the next climax, which should be faster than the first, retard again, and build to the third, which should be faster than the second, and on to the major climax, where the pace should be fastest."⁸ Do words translate to numbers? Does slow, fast, faster and fastest boil down to measurable cutting rates? Does what Griffith say to wider public correspond to what he does on a studio set and in the cutting room? And is it Griffith who says this after all? What follows results from the research and thinking each of us had time to do in the wake of that discussion in the space of the year elapsed from then to now.

Did Griffith Really Write This?

Homer never existed. Today this is absolutely certain. The way it happened was completely different. *Iliad* and *Odyssey* were written by another old man, who was blind too...

⁸ Pace p. 30

As published in *Liberty Magazine* in 1926, David Wark Griffith's article "Pace in the Movies" began with the following editorial run up: "A Famous Director Reveals the Secret of Good Pictures." Our cinemetric analysis of Griffith's films takes this statement as read, and treats what Griffith's article says about editing as a prescription or recipe, of sorts. A legitimate question has been raised, however, of whether Griffith's "Pace in the Movies" had been written by Griffith himself. *Liberty* was a widely-read weekly; Griffith, a widely known name in film industry. What if Griffith merely lent his signature to a staff writer with *Liberty* or someone from the studio publicity department? After all, a much-quoted interview allegedly given by Griffith in 1911 has recently been shown to be a fake.¹⁰ Are we safe to assume, as we do in this paper, that "the secret the famous director reveals" is really Griffith's own? One cannot be too cautious about a possible deal between a deadline-minded journalist and an always-busy filmmaker.

The point is well taken; in fact, it could hardly have been taken better. Doubts voiced at the 2014 Cinemetrics Conference regarding Griffith's authorship of "Pace in the Movies" sent us on an additional research, an opportunity one never regrets taking. Our initial hope was to find a manuscript or some other evidence of Griffith's hand in the "Pace." No such luck; yet a careful look at Griffith's papers, published and unpublished, opened up new spaces for reflection on the writing of the "Pace" and its purported message.

Griffith's theoretical legacy counts fifty-six interviews¹¹ and twenty articles (or so-called letters) on this or that aspect of film poetics.¹² Most of the latter are signed 'Griffith;' in two cases when Griffith used someone's help the helper's name appears next to Griffith's. "How Do You Like the Show?" published in the *Collier's* is signed "by David Wark Griffith, as told to Myron M. Stearns" (*Collier's*, April 24, 1926, pp. 8-9); and Griffith's 1930 "Selection of the 'Best Fifty' Pictures" was compiled together with Thornton Delehanty.

This does not prove or disprove anything, of course. That *Collier's* or *The New York Evening Post* was scrupulous about authorship does not entail that the *Liberty* would, too. A more telling token in this respect is a long-term (not one-time) relationship between Griffith and the *Liberty Magazine*. Even if a ghostwriter did haunt the pages of the *Liberty* in 1926 it must have spared Griffith's prose, or at least never scared Griffith off: two more essays signed "David Wark Griffith" appeared in the *Liberty* after "Pace in the Movies," one in 1929, the other in 1939.¹³ The first of the three was most likely commissioned sometime in March when, according to an inter-office message, Griffith agreed to talk with one Mr. Denby who had phoned to request an appointment on the part of *Liberty Magazine* about

⁹ Гомера не было. Теперь это уже доказано. Все было совсем не так. Илиаду и Одиссею написал совершенно другой старик, тоже слепой... (Михаил Ардов. Легендарная Ордынка)

¹⁰ Slide

¹¹ Slide

¹² Geduld, Schickel, Cherchi Usai

¹³ We can guess from the title of Griffith's second essay for *Liberty* what the subject Shepard Butler suggested could have been: "What is Beauty in the Motion Picture?"

“some articles they are running, and in which they feel Mr. Griffith would be interested;”¹⁴ as to the 1929 publication, a draft copy of a cable sent by R.A. Klune, Business Manager of Griffith’s Art Cinema Corp., to Mr. Shepard Butler, Executive Editor of *Liberty Weekly* says this: “Mr. Griffith interested in writing article subject your wire april twentyninth When would you require this.”¹⁵

The above, we believe, speaks for two facts: that Griffith took writing for the *Liberty* seriously, and that the magazine treated him as an author, not as a mere name. Looking closer at “Pace in the Movies” we may also inquire about a motive. Was there a specific motive which made Griffith say what he said in that particular essay from 1926?

A classic motive for a filmmaker to go public with their views (now as then) is to promote a movie about to be released. If Griffith had this in mind his essay turned out to be a month late: Griffith’s main (in fact, the only) feature from 1926, *The Sorrows of Satan* premiered on October 12; “Pace in the Movies” came out on November 13. A different, less local explanation makes a likelier story of the origin of “Pace:” what Griffith wanted the article to do was to bolster his endangered reputation as a filmmaker, rather than promote his new film (Paramount’s as much as his, one might add).

Endangered by whom or what? As it happened, the year 1926 marked ten years since *Intolerance*, Griffith’s peak of fame, now eclipsed by an all-American craze for latest foreign (European, mostly German) pictures. The tenth anniversary of *Intolerance* did not go unnoticed. Beginning October 17, 1926 the International Film Arts Guild in New York hosted a four-week long retrospective of Griffith’s older classics; but it was that same Guild that also featured an Ernst Lubitsch retrospective and, on a more general note, used to pay tribute to critically acclaimed directors whose films, regardless of whether produced in Europe or in the US, were found to be bearing the stamp of European refinement and sophistication. The Guild was, after all, named “of Film Arts,” and “International,” to cap it.

As we learn from a newspaper clipping preserved among Griffith’s papers, Griffith was well aware of a possibility of this or that New York critic being tempted to parallel and contrast his own famous hits of twelve to three years ago to more recent hits of that European new wave. The clipping in question is of an essay published by Seymour Stern shortly before the Griffith retrospective was scheduled to be launched. A fanatical admirer of Griffith, Seymour Stern’s essay sounds apprehensive of his American idol being upstaged by his younger “European” co-runners.

Everybody ... knows that since *The Birth of a Nation* Griffith has lost much, if not most, of the prestige of his former years. German technique, embodied first in *Deception*,¹⁶ subsequently in *Caligari*, later in *The Last Laugh*, now in *Variety*; foreign talent pouring into America, first

¹⁴ An “inter-office message” sent by C.M. Conway to Garret Lloyd of *D.W. Griffith, Incorporated* of March 29, 1926

¹⁵ “What is Beauty in the Motion Picture?”¹⁵ was published some six and a half months later, on October 19, 1929.

¹⁶ American distribution title of Ernst Lubitsch’s 1920 German-made *Anna Boleyn*.

Lubitsch, then Stroheim, later Seastrom, now Dupont and Murnau; Griffith's failure to keep pace with the advanced, and more distinctly cinematic, ideas of these men; Griffith's obstinate refusal to part company with that verbose villain – the subtitle; Griffith's tragically persistent and wholly vain attempt to rival his own masterwork, *The Birth of a Nation* by producing a picture along the same lines, instead of trying to beat it along different lines – all that contrived to turn critical as well as popular sentiment against the “master.” The designation, in fact, has already for several years been applied to others—to Lubitsch, to Stroheim, to Fritz Lang, to F.W. Murnau, and, by a few, even to Dupont.¹⁷

And so on. What could have happened to “the genius that made of *Intolerance* the most awe-inspiring lesson that ever dazzled its way across the silversheet?” the critic asks. Stern's verdict was: Griffith's reliance on his own, time-proven film-making recipe.

The trouble with Griffith is, he has a formula, and true artists generally don't bother with formulae. The scheme, which is known to nearly every man, woman and child in America is based on the pattern of *The Birth*. It consists of a problem, a contention, an imperilment of one-half of the cast, including the heroine, by the other half, and the final victory of the former half over the latter by means of death-defying riders who clatter through the alleys of Paris or through the valleys of America to the rescue.¹⁸

Each time Griffith resorts to the time-proven rescue formula, he gives in to Germans, Stern contends. Suppose Griffith reads this (which he quite likely did, as a copy of Stern's essay is found among his papers), gets angry (another possibility we cannot rule out), and decides to make it known what he, David Wark Griffith, has to say about formulae and Germans. If this is what happened in October, 1926 Griffith's “Pace in the Movies” published in November sounds much like an essay thus conceived.

People come to the movies for stars and stories, Griffith begins. This article is not about either. It is, Griffith stipulates, about “the quest leads into the soul of the movies where there resides something that is greater than stars, and stories, and little trick of the trade. That something I have called pace.” (p. 28). What is pace? “Pace is a new word to describe an idea which is old in the motion-picture industry, but one which I doubt has been brought—at least in the way I intend to bring it—to the public's attention,” Griffith answers; “pace is the secret of the director's art” (p. 28).

At first, the word “pace” as Griffith uses it in 1926 does not appear too different from what it means when we hear more recent filmmakers speak of pace today. Compare the following passage from an interview in which cinematographer Phedon Papamichael recalls a pre-production conversation with director Alexander Payne about the future look of their 2013 *Nebraska*: “Another thing we talked about

¹⁷ “Kaleidoscopia” by Seymour Stern for *NY Sun*, D.W. Griffith's Papers, MoMA, 10/14/26

¹⁸ *Ibid.*

was having a pacing to the film that allowed the audience to take in these images ... The [wide-angle shot] compositions are of greater importance in a movie that is not as cutty and fast-paced.”¹⁹

Normally, as here, characteristics like slow versus “cutty” give us a good enough idea of what the pace of a movie would be like. Not so for Griffith whose cognitive quest starts where we tend to leave it off. Is the pace of a movie sealed by being defined as fast or slow, or this pace varies within the duration of the film; and if it does, how? How is pace in the movies related to human biometrics, for instance, to the heartbeat in a person watching a show? And, if so, does it mean that there is one Universal Recipe for pacing, or pacings may vary depending on what culture the movie belongs to, for instance, American or German? Such is the range and scale of questions that Griffith tackles in his “Pace in the Movies” published in *Liberty* on November 13, 1926.

Griffith’s answer to the first of these questions is explicit. Must the movie be slow or fast throughout? Not only must the pace change as the movie unfolds, pace would not be pace *unless* it didn’t. Griffith’s essay proves this by assumes the opposite: “If the picture were made so that each scene contained the same (or even approximately the same) number of frames ... the audience would drop into the Land of Nod. To escape this eventual result of monotonous repetition, the director is forced to vary the length of his so-called shots—whether he has some conception of pace or not” (p. 30).²⁰

A remarkable thing about the above assumption is that is exclusively numeric. No one is entitled to restrict Griffith’s notion of pace to shot lengths alone; but to rule them out would go against Griffith’s mandate. Throughout the essay, as in the above, Griffith talks about pace counting. Terms like the “number of frames” is what cinematics understands best, and this is how Griffith, too interprets slow and fast when he says: “The pace must be quickened from beginning to end.” Terms like “climax” may point in all directions, and have been used by many to refer to the dramatic tension, but when we read “The action must quicken to a height in a minor climax, then slow down and build again to the next climax, which should be faster than the first” (p. 30) we know the formula has to do with speed, and yes, the speed of cutting.

Pace in the movies must pick up and slow down in a continuously expanding sinusoid. Did Griffith consider this pace formula universal? Yes and no, and the “and no” is not to be ignored. Universal, because, as Griffith bravely assumes, the faster the pace of a movie the quicker the pulse in the person watching it; and not universal because it is up to the filmmaker whether to follow the pace of the human pulse or not. This is where the “Germans” come in.

In the practical production of these climaxes, opinion is divided into two schools; but the human pulse beat, as the criterion of pacing, is perceived in both. The American school (and I describe it

¹⁹ Quoted in Mecado Murphy, “Below the Line: Shooting ‘Nebraska’” *The New York Times*, January 15, 2014 <http://carpetbagger.blogs.nytimes.com/2014/01/15/below-the-line-shooting-nebraska/>

²⁰ The Attentional Theory of Cinematic Continuity Author: Smith, Tim J. Source: Projections, Volume 6, Number 1, Summer 2012, pp. 1-27(27)

in that way because it has been generally adopted in American films) makes an effort to keep the tempo of the picture in tune with the average human heartbeat, which, of course, increases in rapidity under such influences as excitement, and may almost stop in moment of pregnant suspense. The other method, which may be called the German type because it has been widely deployed by German directors, slows the unfolding of the picture until the pulse races on ahead of it (p. 30).

Griffith's view on so-labeled German films vis-à-vis his own is more complex than whatever critics like Seymour Stern could come up with. Unlike the latter, Griffith does not see this relationship as a contest. In fact, he had great esteem for Murnau, Lubitsch and Dupont; Griffith's 1930 list of "fifty finest all-time films" includes six "German-type" pictures alongside (if below) six made by himself. And this not including three of Griffith's favorites by Stroheim whose phony "von" could have fooled Stern, not Griffith).²¹

Neither of the schools, in Griffith's view, is better or worse than the other; simply, each derives from a different movie viewing culture. The difference, to use Griffith's own words, is between "living" the story and "watching it". *Living* a story is being in it; such are American audiences which "favor the pictures paced with the beat of the heart" (p. 30) A Confederate veteran, Griffith remembers, who survived actual battles with the actual Yanks, almost died during seeing *The Birth of a Nation*: "The pacing locked step with his pulse and nearly undid the old gentleman, who had twelve grandchildren with him" (p. 31). On the other hand, *watching* a story is keeping it at a distance; in this case the right pacing goes against the beat – an editing strategy which Griffith calls "underpacing."

But sometimes more than a mere variation in the beat of a drama's rhythm divides the two schools. It involves the whole attitude in which the creation of a motion picture is approached. When the American school of pacing presents a film, it says to you: "Come and *have* a great experience!" Whereas the German school says: "Come and *see* a great experience!" (p. 30).

drama.
 | perfect patterns for
 | ture.

ple, and one that re-
 it of drama. I mean

come quietly, almost
 Gradually they mass
 ominously, warning
 the business of their
 ide their pristine as-
 tufts. They have
 k fierceness, like the
 iolent moods.

al calm heightens the
 ; the action, as we
 Then occurs a thrust
 wind, and the low
 thunder. Everything
 e for the climax of
 a film. Nature is a

such a sharp critic of
 ; audience. Whenever
 h with character por-
 collateral to the main
 is promptly and de-

spectator say: "For
 don't they do some-
 t the acting or the
 s the pacing.

else to pace besides
 vents. Drama must
 rise and fall of a
 the hypnotic quality
 must also have fortis-
 t must strike deep,
 inconsequential ones—

Whereas the German school
 says: "Come and see a great
 experience!"

A lover yourself, or only
 watching lovers? A fighter
 yourself, or only a witness to
 a fray? Should the audience
 be considered as living the
 story, or as merely watching
 an interesting spectacle? My
 private sympathies are with
 the verdict you have rendered.

Getting the public pulse
 into a picture is a process as
 tedious as bricklaying.

In the opening scenes of a
 movie there may be no action
 whatever. For instance, a
 landscape or the exterior of a
 building may be offered. With-
 out characters there can be no
 pace, in the strictest sense.
 But a rhythm is there, in-
 troduced by timing the scene
 in footage of film.

Anyone in the audience can
 test the pacing of a picture.
 The rhythm is measured in
 counts. Imagine the ticking
 of a grandfather's clock. Tick!
 Tock! The sound is most de-



A SCENE from
Siegfried, illus-
 trating the type of
 picture favored by
 Germans.

The director
 counterfeits the
 operation of the
 eye with his lens.
 He shows a wound-
 ed dog on the bat-
 tlefield, a soldier
 who pauses to light
 a cigarette in the
 mouth of a dying
 man. For these are
 the things the sol-
 dier actually sees;



THE famous char-
 iot race from
Ben-Hur—the type
 of picture favored
 by Americans.

Figure 1. Frame enlargements from *Nibelungen* (above) and *Ben Hur* (left) inserted in the *Liberty* version of "Pace in the Movies" to illustrate Griffith's idea of different pacing in German and American films

Liberty was an illustrated weekly. The stills from two costume movies, one American, the other German intended to illustrate Griffith's idea of two national paces in the movies could hardly have been chosen better (fig. 1). One of these showing horses galloping at full speed carries this caption: "The famous chariot race from *Ben Hur*—the type of pictures favored by Americans." To the right, a still from Fritz Lang's *Die Nibelungen* is showing a black forest and a white horse, its hooves in mist. The horse and horseman do not move. The caption says: "A scene from *Siegfried*, illustrating the type of picture favored by Germans." What other image, if not of horses, will better illustrate the concept of pace?

Griffith was a man of few words, and not too prolific as a writer (unsurprisingly so, considering the size and number of films the man produced). Yet, as a veteran film columnist Louella Parsons wrote in 1922, "David Griffith always has something to say when he speaks, and we believe this is worthy of consideration."²² A look at the film-cultural context of 1926 – the tenth anniversary of *Intolerance*, the

New York retrospective of Griffith's major films, the critical fad for films made by Lubitsch, Stroheim, Lang and Murnau – tells us it is no one but Griffith himself who speaks in "Pace in the Movies."

On Pace and Pulse: Science or Fiction?

HAMLET

I loved Ophelia. Forty thousand brothers
Could not with all their quantity of love
Make up my sum. What wilt thou do for her?

CLAUDIUS

O, he is mad, Laertes.

That the question arose about the authorship of "Pace in the Movies" is due to a claim not made by Griffith's other essays: pace in the movies must be counted, as we count steps as we dance, or pulse if we feel we danced too fast. To get the movie right, each sequence of it must be paced out. In fact, *pulsed out*, for the right pace of a film depends of the filmmaker's sense of pulse.

Pace and pulse are twin terms that run through the whole of Griffith's essay. Both terms relate to speed, from slow to fast, but the main question is, the speed of what? Pace is the speed of cutting, namely, the rate with which consecutive shots succeed each other. As to pulse, what Griffith means by it is more elusive. When he claims that pace in the movies "is a part of the pulse of life itself" (p. 28) the word pulse takes on the mantle of philosophy; at other times, what pulse means is just pulse: a way to measure your heart rate by palpating an artery at your wrist. It is exactly this medical procedure to which Griffith suggests that we resort in case any of us become curious about what pace in the movies does to us as film spectators:

Picture fans will find it a fascinating pastime to measure their pulse beats with the pacing of motion pictures. Please don't try it the first time you view the film. Give it a chance to interest and amuse and arouse you on your first visit. But when you go back, surrender yourself to the picture as you did at first. Then, when there is a quickened action, a climax or a tense situation, feel your pulse and see if it isn't going about the same beat as the pace in the drama. You will find that it is, for the very good reason that the whole science of pace in the drama is founded upon your pulse (p. 30).

Was Griffith serious as he wrote this? Did he really see, in his mind's eye, a flesh-and-blood filmgoer undertaking a self-test like this? If Griffith didn't, then the layout editor working for *Liberty* clearly did. Take a look at the headpiece that decorates the title "Pace in the Movies" as Griffith's essay appeared in the *Liberty Magazine* on November 13, 1926 (Fig 2). To the left of the title is a photograph showing a lovely profile of a young lady counting the rate of her pulse as she watches the show on the screen – exactly as Griffith instructs us to do. Planted by the *Liberty* editor at the prow of Griffith's printed essay,

this pulse-counting beauty looks like a muse or figurehead of cinematics – yet a question arises: does what she is shown doing really qualify as counting?

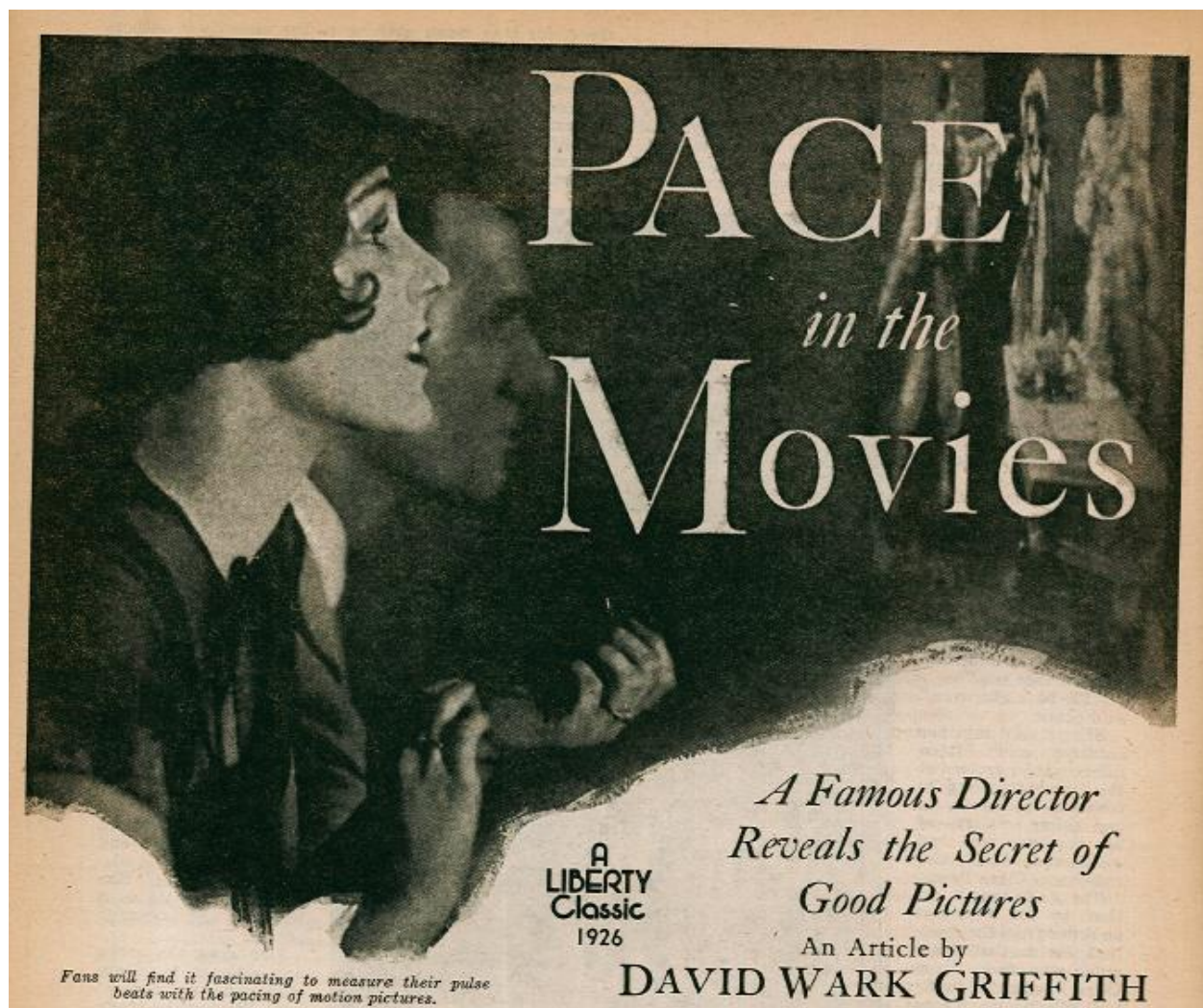


Figure 2 Headpiece photograph to “Pace in the Movies” illustrates Griffith’s suggestion to count one’s pulse beats while watching films

Call this an objection from semantics. Muses and figureheads are metaphoric creatures; a counting muse presents no exception. Numeric metaphors exist, and must be told apart from numeric data. When my speedometer says 40 mph it is data that I am dealing with; but not when I open a 1914 issue of the Moscow-based *Theater Gazette* and read this in a review of *Silent Witnesses*, a perfectly unhurried Russian film: “Mr. Voznesensky makes his drama move with deliberate slowness, at a speed of ‘no more than 40 kilometers per hour’.”²³ Numeric expressions can function as verbal tropes, as when Shakespeare makes Hamlet price his love for Ophelia above the “quantity of love” combined in forty thousand brothers; conversely, verbal signs can serve as quantitative symbols, as when another classic,

²³ “Silent Witnesses,” *Teatralnaya Gazeta*, 1914, # 19, p. 11

James Watts, used the word “horse” to quantify the power of an engine. The main thing is not to confuse the two.

The semantic objection has a point. There are figures and figures: numeric figures, figurative ones, figures of speech and figures of imagination. The figure of the pulse-palpating filmgoer conjured up in “Pace in the Movies” is a numeric ghost: what otherwise would have prevented Griffith from showing us some palpable data this mental experiment resulted in? But that a house is haunted does not entail it is uninhabited. From a numeric perspective, it hardly matters what price Prince Hamlet puts on his sentiment for the deceased fiancée – forty, forty thousand, or seventy thousand brothers: any sum is but a rhetorical equivalent of “many.” On the other hand, *Hamlet* is a play in verse, that is, in metric speech, which means that forty brothers would be lacking two syllables to fill the iambic pentameter line, and seventy thousand brothers would be one syllable too long. Unrestricted for the purpose of rhetoric, the number of brothers Shakespeare could and could not use was regulated by the economy of form.

Pace in the movies: science or fiction? This depends on whether we are looking at Griffith’s rhetoric or his idea of film form. “Pace in the Movies” consists of two intertwined lines of argument, not one. One of these is concerned with the *effect* of pacing: what the well-chosen pace can do with film viewers’ hearts and minds. This part in the space of Griffith’s argument is occupied by fiction: here, we are introduced to Griffith’s pulse-counting spectator; here, rhetoric cloaked in numbers rules. The other line of argument – call it poetics, or “the science of pace,” as Griffith has it – is about how pace is *made*. The poetics of pacing, distinct from the numeric rhetoric Griffith resorts to in order to sell pacing to the reader, is where numbers do what they do best: add up.

On Shots and Beats: Griffith’s “Conception of Pace”

Killing the sounds,
I dissected music, like a corpse. I checked
Harmony by algebra.
(Salieri, in Alexander Pushkin’s
tragedy Mozart and Salieri)

Cinema is intrinsically numeric. Every shot of a film is of a certain length. Shot lengths (SL) vary from being one frame long to being as long as the movie itself. For the purpose of accuracy, SLs are best counted in frames; for practical reasons, most people resort to the less accurate yet more intuitive measurement in (deci-) seconds; the measures adopted by the film industry a long time ago were feet and meters.

That cinema is a numeric medium does not entail it is a metrical one. Films exist (indeed, prevail) in which the length of a shot is largely decided by what this shot depicts; lengths of neighboring shots have no (or little) weight in this decision. On the other hand, where we find numbers, we also find numeric patterns. Why not try and trim shots so that neighboring SLs form regular patterns – just as words do in

prosody or beats in music? Griffith who knew his music and used to write poems (he even published one!) was a likely filmmaker to ask himself this question.²⁴ He did.

It is from questions like that that Griffith's poetics of editing is growing. There are three tips a successful director will find it helpful to follow. Compose your film of many shorter scenes (or "shots" – still a fresh coinage in 1926) rather than a few longer ones. Frequent shot changes can be wearisome and lull audiences to sleep – but only if your shots are of uniform length. "To escape this eventual result of monotonous repetition, the director is forced to vary the length of his so-called shots—whether he has any conception of pace or not," Griffith explains (p. 30).

SLs can vary and vary – vary randomly or according to a plan, a numeric design Griffith calls the director's "conception of pace." For instance, SLs can be timed as they do in music and in dance. The following mockup sequence from "Pace in the Movies" illustrated a dance-derived conception of pace. Below is Griffith's example verbatim and in full; the only change we made to the text was to break down his mockup "scenes" (shots) into separate paragraphs numbered (1) to (8).

Let us imagine a love scene. The director desires to pace it in the rhythm of a waltz, or in scenes whose lengths are multiple of three.

- (1) A boy and girl are seated on a stone wall beside a country road. The camera records them as full-length figures for a count perhaps of six – three seconds.
- (2) Then the camera moves closer, picturing the boy talking earnestly with the girl, for a count of nine.
- (3) Placed closer still, the camera photographs the boy pleading with her, for a count of twelve.
- (4) A close-up of the girl is made. She registers indifference. The count is three, a second and a half – the basic of the tempo.
- (5) The camera turns back to the boy's troubled face, for a count of six.
- (6) He swings down from the wall, and the camera moves back to record that action, for a count of nine.
- (7) The girl is interested now. She watches the boy, as he turns away from her. Count six.
- (8) Abruptly he faces about and renews his pleading. The girl seems to be yielding. Such a scene would probably run to the count of twelve, because of its importance.

As we can see, Griffith's mental movie consists of eight shots, with two sets of values, nominal and numeric, assigned to each. The nominal scale is one of shot scales from Long Shot (LS) to Medium Long Shot (MLS) to Medium Shot (MS) to Close-Up (CU). What shot scales Griffith had in mind either follows (as in shots 1-6) or can be ostensibly construed (shots 7, 8) from the description. Since we are dealing with a mental, not real movie, we are entitled to a leeway as to co-assigning mental values where Griffith's own thinking is not clear.

²⁴ Karl Brown Music; poems

In addition, each of the eight shots found in the mockup comes with a numeric SL value assigned. Griffith-assigned figures come either in “counts” (for all the eight) or counts-cum-seconds (shots 1 and 4).

All the above values are summarized in Table 1:

Shots	Shot scale	Counts	Seconds
1	LS (“full-length figures”)	6	3
2	MLS (“the camera moves closer”)	9	4.5
3	MS (“Placed closer still”)	12	6
4	CU (“close-up of the girl”)	3	1.5
5	CU (“boy’s troubled face”)	6	3
6	MLS (“camera moves back”)	9	4.5
7	CU (conjectural; MLS or MS might be used here too)	6	3
8	LS (conjectural; MLS might be used here too)	12	6

Table 1: Nominal and numeric values in Griffith’s mockup sequence

“I have always found it necessary to depend entirely upon memory and judgement in this pacing of scenes never having found a record chart which was simple or exact,” Griffith admits in “Pace in the Movies” (p. 30). One is tempted to do now what Griffith didn’t then, particularly because his mockup sequence – an artificial, out-of-his-head example – is less fuzzy and chance-dependent than sequences from actual films we typically use to collect cinematics data.

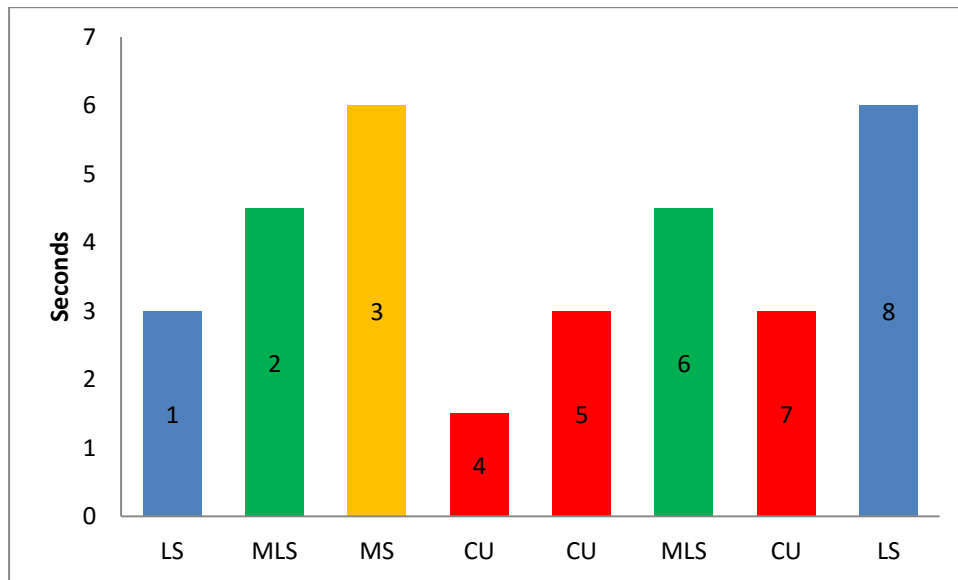


Figure 3: Bar chart representing data in Table 1. Shot scales are color-coded

What this chart tells us may not be based on an adequate enough amount of data to get a true insight into Griffith’s conception of pace, but may be good enough for an inkling. Provided we were correct in hind-guessing what shot-scale values Griffith might have assigned for shots 7-8, it may be of significance that the sequence starts and ends with long-scale shots (1, 8). Nor is it fortuitous that an average length of long-scale shots (4.5 seconds) is higher than that of close-ups (2.5 seconds).

But the clearest thing to come out when we look at the graph on Figure 3 (something one is less likely to notice either in Griffith’s mockup text or in Table 3) is the peculiar character of rhythm. In choosing a pacing conception for this love story, Griffith says, I will use the rhythm of a waltz, making the lengths of my scenes multiple of three. The X3 principle is indeed evident in the series of Griffith’s “counts:” 6, 9, 12, 3, 6, 9, 6, 12. On a higher level, too, the triple structure of pacing transpires in the way bars grow and fall in the chart in Figure 3:



Another way of rendering this might be *fast-slower-slow*; *faster-slower-slow*; *slower-slow*. To what extent, if at all, this pattern matches the rhythm of a waltz is hard to say; but it does look like a pattern falling and rising on the count of three.

Conclusion

It is common to think of art and mechanics as hereditary foes. But they are not always so.

D.W. Griffith. “Pace in the Movies”

Let us end with the phrase we used in the beginning of this essay. No new machine-tool is born without its critics. Some are Luddites who’ll strive to break it; others, like ours, will help us make it stronger. Our strength lies with our heredity – people who used to count long before us. Some were scientists who cared about the attention span; some, critics who worried about filmmakers’ sanity; some, filmmakers for whom counting was part of their skill. Cinematics is a machine that studies skills – and as long as those skills will include counting, cinematics and film art will be hereditary friends.