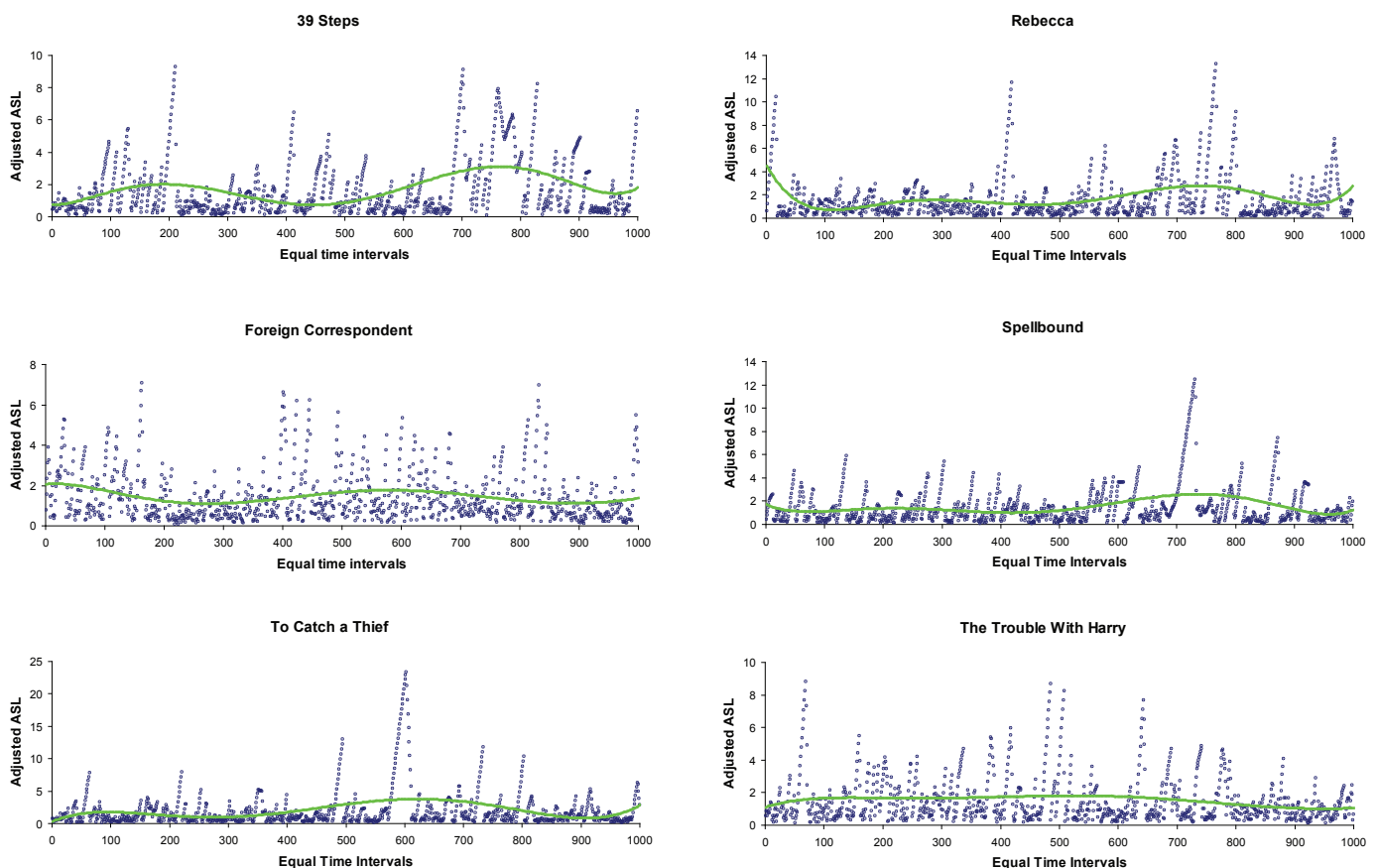


Getting a Result

In the latest question for discussion, Yuri Tsvian and Keith Brisson have again raised the matter of whether there are meaningful regularities in shot length patterns across all the films studied in the Cinemetrics database. For instance, do all the Griffith Biograph shorts have the same large scale variations in their shot lengths along the length of the film?

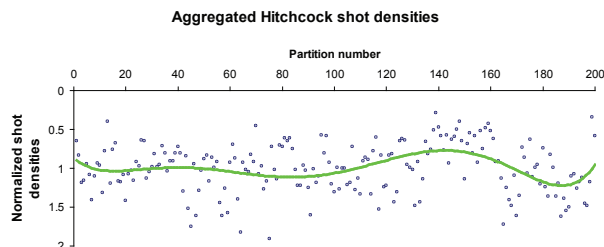
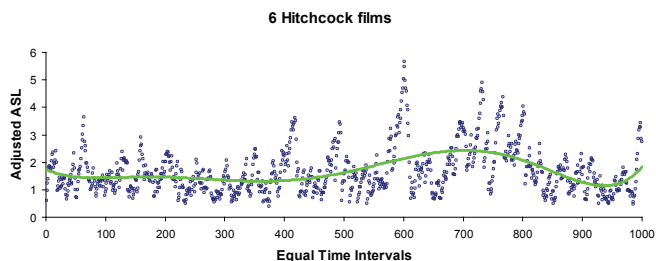
The answer to this is quite clearly, no. This can be seen at a glance by looking at the page in the Cinemetrics labs entitled “Griffith -- select reliable submissions -- ytsivian”, and dated 9th. of February 2011. In the list of films there, the title and date are followed by a little graphic wiggle, the ‘sparkline’, which is based on the 7th degree trendline for the film. These are nearly all quite different one from another, and too varied to allow any grouping that could be matched against, say, genre. For instance, two of the films on Red Indian subjects, *The Redman’s View* and *The Indian Brothers* have noticeably different sparklines. And so on. Any procedure that reduces the shot length patterns to a simpler pattern, film by film, will not overcome the marked intrinsic differences in the actual shot length patterns, as shown by the Cinemetrics graphs, for these and other films.

In this context, I have previously mentioned the example of Alfred Hitchcock. Taking the six Hitchcock films in the collection of 150 films whose shot-length records have been provided to the Cinemetric database by James Cutting and his associates, a display of the variation in their cutting rates shows a quite varied pattern. To show this I used a slight simplification of the technique that they created to investigate (unsuccessfully) the existence of acts in sound feature films in their paper *How Act Structure Sculpts Shot Lengths and Shot Transitions in Hollywood Film* (James E. Cutting, Kaitlin L. Brunick, and Jordan E. DeLong in *Projections*, 5, 1-16.) This involves dividing the length of the film into 1000 equal time length divisions or partitions, and creating a new ‘adjusted’ or ‘normalized’ ASL for each partition on the basis of the lengths of shots inside, and adjoining, each partition. This technique is fairly similar to that used by Keith Brisson, though it involves some complicated refinements beyond his method. Nevertheless, it will give pretty much the same results, except at the very beginning of a film. (See the Cinemetrics discussion board topic started by Keith Brisson on 14th. March 2011, and called “Side by Side: Data Analysis Across Films”.) Both these methods also give results that correspond to the simple technique I subsequently devised to get the ‘shot density’ or cutting rate down the length of a film, by counting the number of shots which fell into each equal partition that the film is divided into. But I also tried a revised version of the Cutting adjusted shot length analysis on the six Hitchcock films in their collection, which gives the graphs shown below:



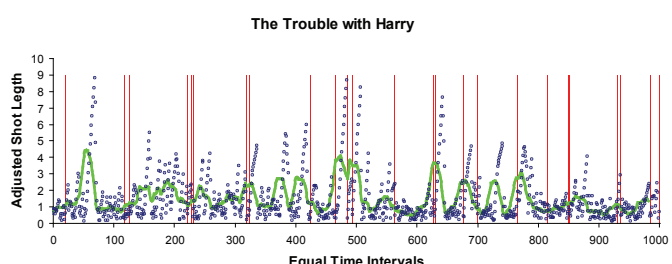
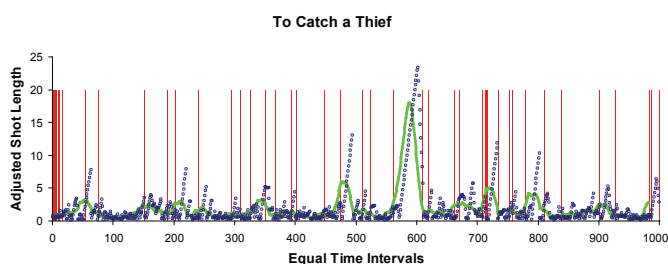
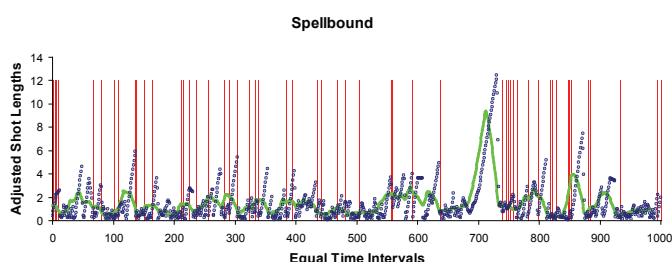
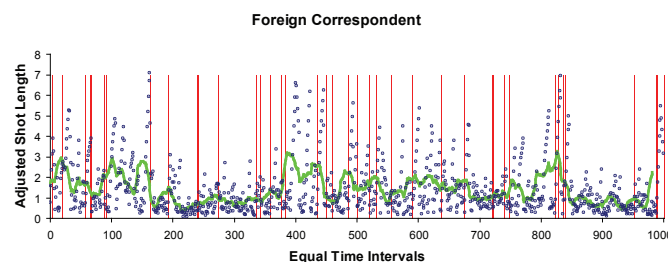
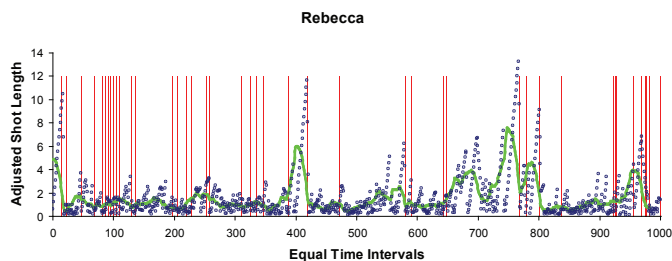
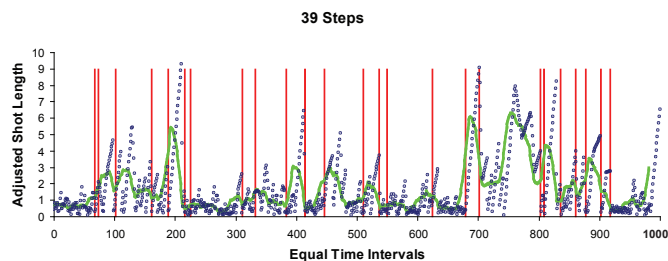
You can readily see that the 6th. order trendline (in green) that I have added has a different shape for each of the films, even for *The 39 Steps* and *Foreign Correspondent*, which both fall into the ‘chase’ category; a classification of his films used by Hitchcock himself. In *The 39 Steps* the speeding up and slowing down of the cutting rate is much more pronounced than in *Foreign Correspondent*, and the maxima and minima for this quantity occur at different places down the timeline for these two films. If there was going to be a standard Hitchcock speed profile, it would surely hold for these two films, which have a basic relationship in the kind of incidents they contain, though not the order in which they occur.

These graphs can be aggregated by adding up the total values for each partition for the six films together, and then we get the graph on the left below:



The graph on the right above shows the related result from using the same sort of aggregation on the same six films, but which have now been analysed using my alternative method of creating shot densities in a series of 200 equal length partitions down the length of the films, as mentioned above. The identical shape of the sixth degree trendline for the two methods indicates their equivalence. (I have used an inverted y-axis for the shot density graph because shot density is the inverse of adjusted Average Shot Length.)

Returning to a consideration of the shapes of the graphs of shot lengths for the separate films, their variation is shown up more clearly by using a rolling average rather than a trendline to investigate their detail. Below are graphs of the adjusted ASLs for the six films, with the value for the rolling average (in green) taken over 20 adjusted shot lengths.



The blue spots represent the adjusted ASL values, the green line is the rolling average calculated from them, and the vertical red lines are the boundaries of the scenes in the films. You can see that there is a fair amount

of correspondence between the highs and the lows of the rolling average and the positions of the scenes in these films.

I admit there is a certain amount of uncertainty about what constitutes a scene in a film, even in the High Hollywood or Classical period (the thirties, forties, and fifties), when film construction was at its most standardized. However, it is possible to define what one means by a scene, and then there is little ambiguity, and not much of a problem in analysis. There are basically two ways of looking at scenes in films, which correspond with the two ways film-makers see them. One is from the production viewpoint, where anything that has to be scheduled separately is a scene, and the other is from a dramatic viewpoint, where any action that runs continuously is a scene. In the High Hollywood period, the beginning or end of this latter sort of dramatic scene is indicated by a dissolve, wipe, fade-out, or fade-in. This definition in terms of dramatic function is how I define a scene in my analysis.

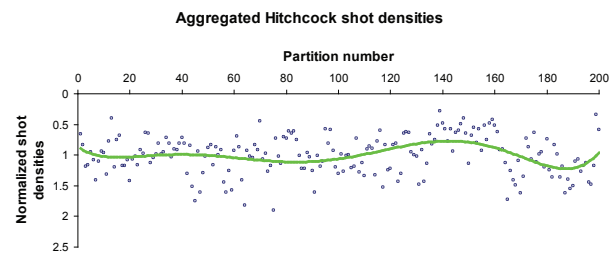
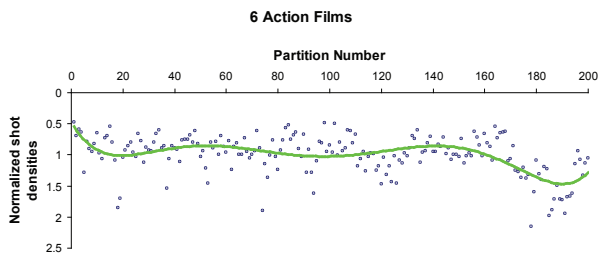
To make what I am saying clear, consider the beginning of *The 39 Steps*. This begins with an establishing shot of the music hall sign, which is quite typical of film construction in the period, so I include it as part of the scene that follows. The action following is that Richard Hannay buys a ticket for the show at the box office, and then goes inside. The performance by a memorist is interrupted by a fight amongst the audience, and then a gun-shot. A mysterious woman grasps Hannay for help as the crowd rush the doors. Outside the music hall, she explains that she fired the shot, and why. She asks for his help, and together they board a bus. All this action runs continuously, but for the production of the film, it would have required at least two separate sets, namely the interior of the music hall and the street outside, and with the filming done on them on different days. That is, from a film production point of view, they would have been described as separate scenes. The scene as I describe it ends with a dissolve at 5 minutes, forty-five seconds and sixteen frames after the director credit, and the next scene is inside the lobby of Hannay's block of flats. In the graph above, the scene end of this first scene occurs at the 69th. partition, and is so indicated by the vertical red line.

As I have said and shown many times, the treatment of scenes in terms of the cutting rate or ASL inside them varies depending on the nature of the action in them. It is usual for scripts to be written with an alternation between the types of scene, which in its turn produces a marked change in cutting rate or ASL from one scene to the next. For scenes that go on for several minutes, there can also be a marked variation in cutting rate inside the scene, and this effect can be seen from the rolling average line in the graph for *The 39 Steps*, between partitions 700 and 800. This is the scene in which, after escaping from the villains on the moor, Hannay and the girl walk and bicker, while he tries to convince her of his story. It is this underlying variation in the cutting rate depending on the content of the scenes, pointed up by the rolling averages, which produces the varying shapes of the trendlines in this group of six Hitchcock films. This is despite the fact that three of them, *The 39 Steps*, *Foreign Correspondent*, and *To Catch a Thief*, can be considered to fall into the class of his 'chase' films. As I have shown in the chapter 'The Great Plottoist' in my book *Moving Into Pictures*, the scripts of these films are constructed by putting a fairly small group of basic situations into different orders down the length of the film. But these different orders of events are quite enough to produce the markedly different cutting rate profiles for the three 'chase' films I am considering. It is this basic technique of script construction, which is also used by other film-makers, that says that there is little to be gained in terms of generalisation about authorship, etc. from the intensive scrutiny of the actual shot lengths used in films.

To put it another way, although there is an average cutting rate profile for these six Hitchcock films added together, and also certainly one for *all* Hitchcock films, the individual cutting rate profiles do not designate any particular film as a Hitchcock film. All the cutting rate profiles for these six films are noticeably different one from another, and also from their aggregated average, as pictured on the previous page. I am really making the same point as Mike Baxter does in his adjoining article *Comparing Cutting Patterns*, but looking at its result from the opposite direction.

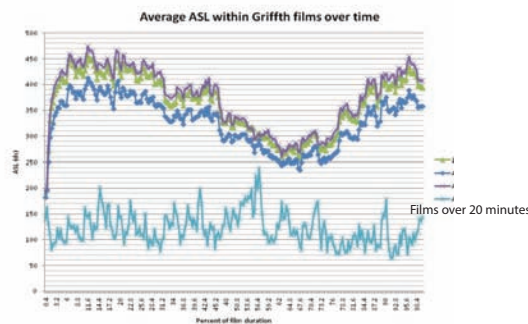
It is probable that the only possible large scale generalisation in this area has already been made by James Cutting and his associates in the article *How Act Structure Sculpt Shot Lengths and Shot Transitions in Hollywood Film*, that I have already mentioned. Although the main thrust of this paper concerning act structures was quite wrong, and has been retracted by the authors (see *On Shot Lengths and Film Acts: A Revised View* by James E. Cutting, Kaitlin L. Brunick, and Jordan DeLong in *Projections* pp 142-145 Vol 6 No1 Summer 2012), nevertheless the original article also contained a generalisation about the average variation in cutting rate in American sound features which does seem to be correct.

Taking 6 films made between 1935 and 1955 from the Cutting corpus, namely *Blood On the Sun*, *The Flame and the Arrow*, *Santa Fe Trail*, *Captain Blood*, *King Solomon's Mines*, and *Westward Ho*, and applying my shot density analysis to them, I get the graph on the left:



The graph on the right above is a repeat of graph of aggregated Hitchcock shot densities that I used earlier in this article. You can see that their trendlines are very similar, with the Hitchcock graph starting off a bit faster, and the six non-Hitchcock films actually having their final accelerando slightly faster than the Hitchcock group. This analysis by James Cutting and his associates represents a major discovery about general trends in cutting rates in American sound feature films. And it is largely endorsed by Mike Baxter's article 'Comparing Cutting Patterns' written in answer to Question 3.

Keith Brisson and Yuri Tsvian's attempt to find significant patterns in their aggregation of the cutting rates in D.W. Griffith's feature films failed, as shown in this graph from the Cinemetrics labs section entitled "Griffith -- select reliable submissions -- ytsivian", of 9th. February 2011:



The lower pale blue trace represents the aggregated adjusted ASL for D.W. Griffith films longer than 20 minutes, and shows only a small speeding up in the cutting in the second half of the aggregated films, as opposed to the large speeding up visible in the second half of his short films. The almost identical speeding up visible when the short films are put together with the feature films is of course because the number of short films is so much larger than the number of feature films, that the shot length data for the feature films is completely swamped by that for the short films. I predict that the same Keith Brisson technique applied *just* to the Griffith features up to *America* (1924), which were all truly produced by the man himself, will show a much more obvious acceleration in the latter part of the graph. Griffith's lack of control over his later productions is most obvious in *Abraham Lincoln* (1930), which is really a Joe Schenck and William Cameron Menzies film, not a Griffith film. You only have to look at all those long tableau shots in it, whose visual style clearly follow William Cameron Menzies' production designs, to see that.

The shapes resulting from the aggregation of the cutting rate graphs for the Griffith Biograph shorts may quite possibly be unique, since his films were constructed differently to those of other American film-makers of this period, but it is not possible to assert this without doing a similar analysis of several hundred films from 1909 to 1913 made by other American film companies.

As for the detailed analysis of the way the cutting rate varies in *individual* Biograph shorts, depending on the content of their scenes, it is worth remembering that cross-cutting between parallel actions was not the only way Griffith got more and more cuts into his Biograph films as time went by. There is also, as I have pointed out a number of times, his technique in moving the continuous action in a scene from one room to

another, with of course a cut for every transition to the next room. This last feature is one of the things that sharply distinguish Griffith's Biograph films from those of other American film makers of the period.

Barry Salt, 2013