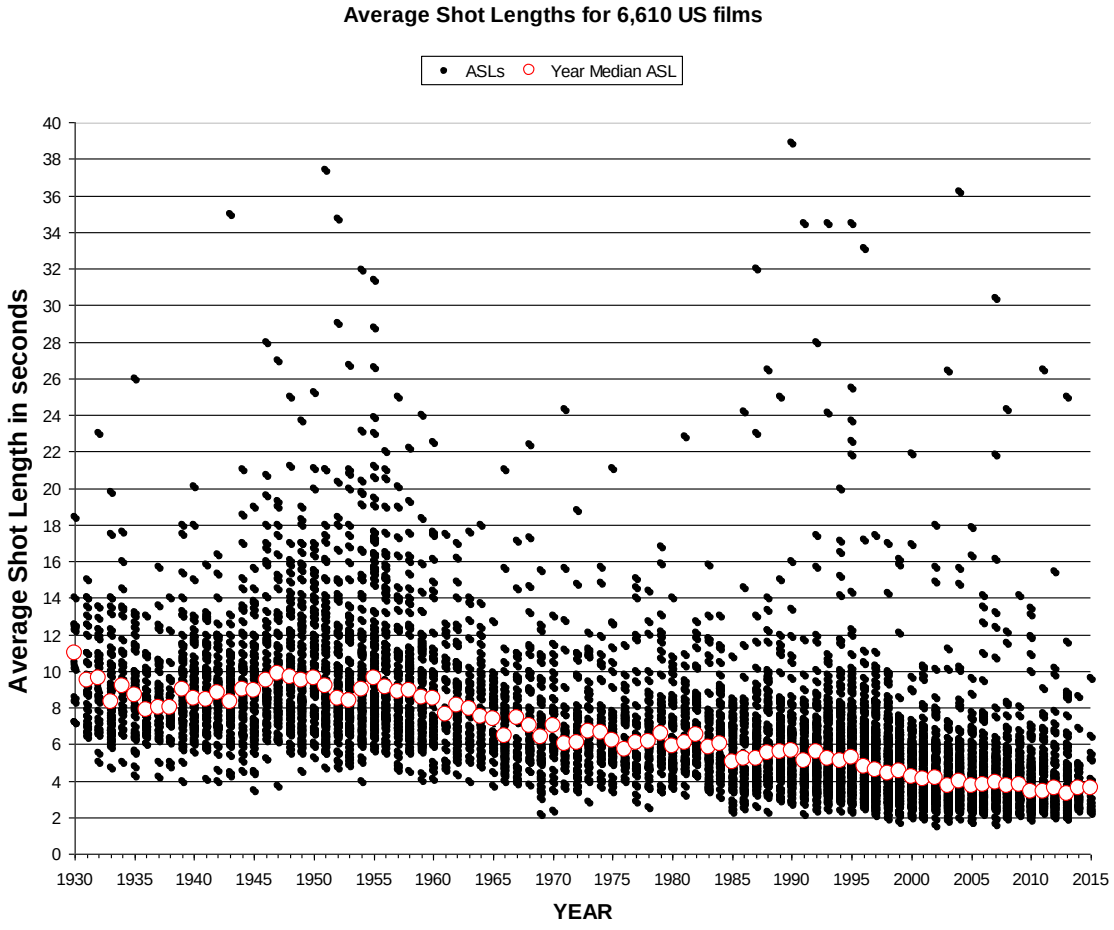
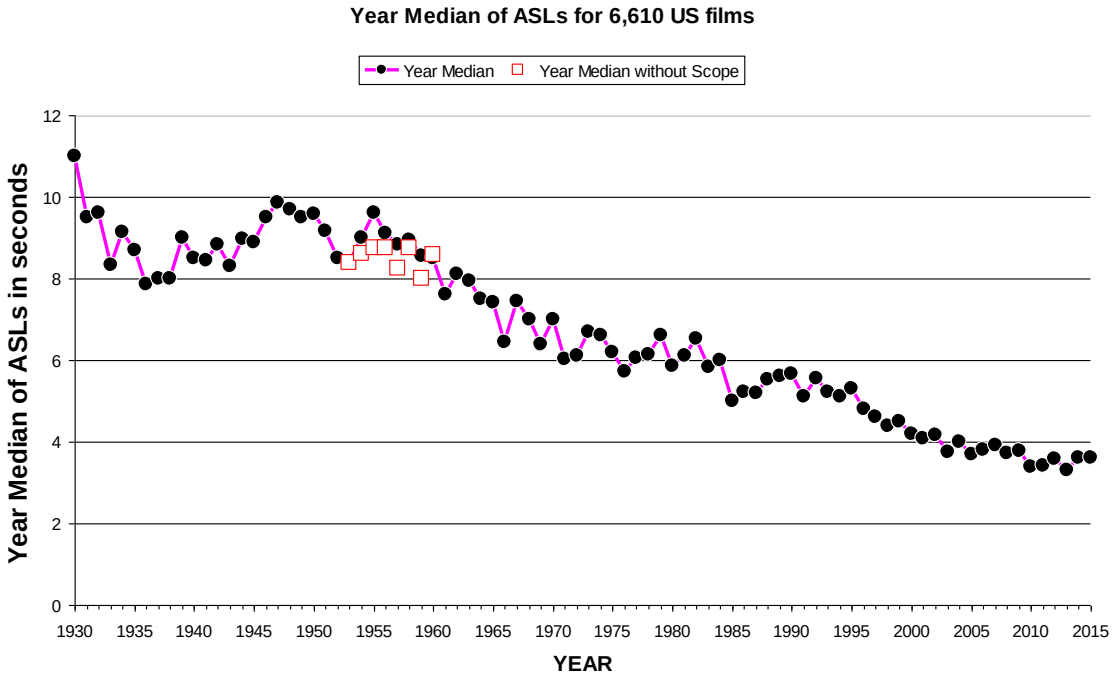
# The End of the Great Speed-Up -- and After

The Great Speed-Up took place from 1951 to 2002. Over that period, the number of shots in the average feature film more than doubled. It appears to be over now, but this remarkable stylistic transformation needs more analysis.

I calculated the Average Shot Lengths (ASLs) for 6,610 American films made from 1930 to 2015, and the results are shown in the graph below. (The individual figures can be found on the *starword.com* website, on the Data page.) The sample is fairly random, and represents about one third of the total American production for those years, so it should give a fairly reliable picture of the trends over this period. Each black dot represents the ASL for one film, and the string of red circles across it show the median values of the ASLs for each year. The films cluster together around the faster cutting rates, and in the whole sample there are only 78 films shot with long takes, and hence having ASLs greater than 20 seconds.




Let's take a quick trip along the path from 1930 to 2015 over the yearly median values indicated by red dots in the graph above, to see what we can see. For easier viewing I will separate out the year median values onto another graph. (Ignore the extra red squares indicated in the 'fifties for the moment.)




The first thing this graph shows is a rapid decrease from the longer takes used in 1930 at the beginning of the sound film period, when there was a strong pressure towards using longer shots because of the technological restrictions on editing, re-recording and mixing sound. When these problems were solved by the beginning of 1932, film-makers moved back towards the kind of shooting and cutting that were usual in silent films of the 'twenties, and Average Shot Lengths went down. This was a little speed-up, but it stalled, and was followed by a little slow-down. At the end of the 'thirties you can see an upward movement in the ASLs as a group of Hollywood film directors began intentionally using longer takes in shooting their films. Their names include George Marshall, John Stahl, Edmund Goulding, George Cukor, John Farrow and Ernst Lubitsch. There is no record of their motives for doing this, but I conjecture that it was to resist the increasing interference in the editing process by the ever more intrusive Hollywood producers. So this stylistic variable appears to be under the conscious control of film-makers.

The trend towards slower cutting further increased from 1946 to 1950, and then a new reverse trend began. Some new directors such as Robert Aldrich and Nicholas Ray and Sherman Rose made action subjects with ASLs under 5 seconds in the early 'fifties, and even some older directors speeded up a bit. Another production factor pushing a move towards faster cutting in the 'fifties was the decision by the Walt Disney Studios to begin making live action feature films in Britain from 1949. These films, starting with *Treasure Island*, were all completely storyboarded like cartoons in the Disney studios in Hollywood, before shooting began in England. The British crews making them were expected to follow these storyboards for every shot. This created some resentment amongst these crews at having their aesthetic input nullified, but it also meant that these films were influenced by the high cutting rates being used in Disney animation features by this date. (*Cinderella* (1950) has an ASL of 4 seconds, much faster than any live

action feature from that year.) Two examples of these Disney live action films released in 1952 are *The Sword and the Rose* with an ASL of 5.1 seconds and *The Story of Robin Hood and His Merry Men* with 4.7 sec., the lowest for any film of that year in my sample.

This new trend towards faster cutting was interrupted briefly by the advent of CinemaScope. (The CinemaScope frame had an aspect ratio of 1:2.35 rather than the 1:1.33 aspect ratio of the existing standard Academy frame.) Hollywood wisdom of the time stated that fast cuts to an image occupying much more of the visual field than the Academy frame would distract the audience, and at first all film-makers bowed before this. There are 24 CinemaScope films amongst the total of 84 films in my selection for 1954, and their ASLs range from 9 seconds to 46 seconds (Preminger's *Carmen Jones*), which gives an average for their ASLs of 14 seconds. If one removes these CinemaScope films from consideration, the peak in the black dot averages at that year vanishes, and we see the figures obtained by omitting CinemaScope films indicated by the red squares and lines from 1953 to 1960 on the second graph. This gives a fairly flat general cutting rate for non-'Scope films through the rest of the 'fifties. By 1956 it had been demonstrated that CinemaScope did not actually require slow cutting, and the increasingly fast cutting in other films overwhelmed the CinemaScope effect by 1960. At that point the general speed-up in cutting rates had really begun. If you follow the red dot averages for each of the years on the graph, the increase in cutting speed through the 'sixties becomes quite obvious, and the lowest individual values such as 3.7 in 1965 for Franklin Schaffner's *The Warlord*, and in 1970 an ASL of 2.3 seconds for Russ Meyer's *Beyond the Valley of the Dolls* stand out. But as far as I am aware, no-one commented on this increase in cutting rate at the time. All I can speculate is that the decrease in the median Average Shot Length was only by about one-tenth of a second per year, and the film-makers had their noses so close to the trees they were hacking down that they could not see the whole Hollywood.

A decrease in ASL from 10 seconds to 5 seconds means that the number of shots in a typical film increases from about 600 to about 1,200, and to get these extra shots meant changes to production practices. The simplest was an increase in the length of the shooting schedules, and another was the use of more than one camera simultaneously to shoot scenes from different angles. (This was already done for action scenes, but eventually it was also used on dialogue scenes.) With action scenes which were well covered from different angles it was easy to make more cuts from one angle to another with action continuity, and the same could be done with dialogue scenes, up to a point. In particular, the increase over the last couple of decades in the number of reaction shots (shots showing someone else listening to the speaker) in scenes involving a group of more than two people should be quite obvious to any one who has been looking carefully at American films for a long time. Some dialogue scenes have to be included to explain the plot moves in even the most mindless action films, and the disruptive effect of too many cuts in these dialogue scenes is what puts an approximate lower limit on average shot lengths. Another way of getting more cuts into a scene was the insertion of brief shots representing subjective thought flashes. Eventually even Dolph Lundgren started having them in his films.

From about 1970 to 1982, the yearly increase in cutting rate almost stopped, if one ignores the small wiggles in the averages for those years, as one should with this sort of statistical data, and after that the general fall in ASL resumed. It was only now that the

first few comments on this phenomenon from film-makers appeared. Another slight speed-up within the speed-up began after 1992. This is before digital editing systems came into wide use, which did not happen till about 1995, so that was not the cause. The decrease in average shot lengths however continued, and finally reached its lowest point ever in 2002, with *Derailed*, a Jean-Claude Van Damme wheeled vehicle directed by Bob Misiorowski. This film holds the all-time speed record with an Average Shot Length of 1.53 seconds. That is 3007 shots in 80 minutes. The only serious challenge for the fast cutting crown since then came from *Taken II* (Olivier Megaton, 2012) with an ASL of 1.54 seconds, and from *Shoot 'Em Up*, made by Michael Davis in 2007. This latter film was explicitly intended by Michael Davis to put John Woo's films in the shade for speed and carnage, and succeeded quantitatively at the first aim, since it has an Average Shot Length of 1.6 seconds, while Woo's films don't get any lower than 2.3 seconds. But it only leaves 151 dead bodies on the ground, whereas Woo has reached over 300 in at least one film.

If you look at the first graph, not only does the median average of the averages flatten out from 2003 onwards, but the general spread of values for each year narrows, till the vast bulk of the ASLs pile up between 2 seconds and 6 seconds. Particularly important is the flattening out of the lower limit to an Average Shot Length at around 1.9 seconds as has happened over the last 20 years, with only nineteen films having lower values. So it looks as though the Great Speed Up is over, and if eventually there is another speed up, it will be a NEW and small speed up.. The upper limit of the main stream that now contains most of the results is about 6 seconds. All this is part of the way the range of variation of the major features of ordinary film construction has been reduced over the same period. This effect *has* been noticed occasionally in recent years. It has to be, when not just ordinary commercial films but also art films from Richard Linklater, Terence Malick, and others are coming in with an ASL under 6 seconds.

I can find no comments on the cutting rate in *Derailed* from film reviewers and such-like. This is not surprising because most people are blind to the occurrence of the cuts in a film, as demonstrated by the researches of Tim Smith. (Smith. Tim J. & Henderson, John M.. **2008**.) What finally drew the attention of commentators to the extreme speed of cutting now being practiced were the Jason Bourne films directed by Paul Greengrass, starting with *The Bourne Supremacy* (2004). This film combined fast cutting (ASL = 2.28 seconds) with fast panning and tilting of the camera. Such a combination in a shot that is only a second long or less makes it impossible for the viewer to instantly see what the objects in the shot actually are. So with the combination of fast cutting and shaky camera, some viewers *do* notice the cuts. In fact there were at least 20 films with faster cutting than *The Bourne Supremacy* made before 2004, but no one noticed this. The majority of reviews of *The Bourne Supremacy* don't mention this novel feature, but there are a minority that do, and here are just some examples of them.

…feverish handheld camera and frenetic editing …**Time Out**

…the fights devolve into an incoherent mess.. **ReelViews, James Berardinelli**

...Combining extremely rapid cutting with shaky, handheld camera work, the two have produced something that is both a bit irritating to watch and a good bit harder to follow than it need be. ...**James DiGiovanna, Tucson Weekly**

Despite this, *The Bourne Supremacy* was as successful at the box office as the first film in the series, *The Bourne Identity* (2002), which was directed by Doug Liman, not Paul Greengrass, so there had to be more sequels. The next was *The Bourne Ultimatum* (2007), which was shot in the same style by the same Greengrass team, and it made twice as much money, approaching 500 million dollars gross worldwide. *The Bourne Legacy*, a spin-off directed by Tony Gilroy, the scriptwriter of the previous films, did not feature the Bourne character, nor Matt Damon, the star of the previous films, but still managed to perform commercially as well as the first two films. Finally, the complete Paul Greengrass team returned with *Jason Bourne* (2017), which again made as much money as *The Bourne Ultimatum*.

It is well worth while giving some objective basis to this phenomenon by making a comparison of the amount of movement in the frame and the cutting rate for the films being discussed. The amount of movement within the frame for all (or part of) a film can be measured by using a version of James Cutting's Visual Activity Index (VAI), as introduced in Cutting, J. E., DeLong, J. E., & Brunick, K. L. **2011.** My method of calculating visual activity is not quite the same as that of James Cutting, but my results should be roughly proportional to his.

Here are these values for the films just discussed. The figure for VAI must fall between 0 and 1 by definition, but to make the differences easier to take in, I will in future quote these vales as a percentage (% VAI).

| Title | Year | Director | ASL | VAI | % VAI |
|---|---|---|---|---|---|
| Derailed | 2002 | Misiorowski, Bob | 1.53 | 0.02 | 2 |
| Bourne Identity, The | 2002 | Liman, Doug | 3.40 | 0.0165 | 1.65 |
| Bloody Sunday | 2002 | Greengrass, Paul | 8.90 | 0.0252 | 2.52 |
| Bourne Supremacy, The | 2004 | Greengrass, Paul | 2.28 | 0.0292 | 2.92 |
| Bourne Ultimatum, The | 2007 | Greengrass, Paul | 2.15 | 0.0345 | 3.45 |
| Shoot 'Em Up | 2007 | Davis, Michael | 1.60 | 0.0349 | 3.49 |
| Bourne Legacy, The | 2012 | Gilroy, Tony | 2.81 | 0.0287 | 2.87 |
| Captain Phillips | 2013 | Greengrass, Paul | 3.07 | 0.0286 | 2.86 |
| Jason Bourne | 2016 | Greengrass, Paul | 2.31 | 0.0301 | 3.01 |

So *The Bourne Ultimatum* and *Shoot 'Em Up* have more than twice the amount of movement within the frame as the original Bourne film directed by Doug Liman, *The Bourne Identity*.

To give a rough contextual comparison for these values, I quote the same values for a miscellaneous collection of films and television programs made before 1990.

| Title | Year | Director | ASL | % VAI |
|---|---|---|---|---|
| Prisoner of Zenda, The | 1937 | Cromwell, John | 6.5 | 1.25 |
| Snow White and the Seven Dwarfs | 1937 | Hand, David | 6.1 | 1.95 |
| Adventures of Robin Hood, The | 1938 | Curtiz & Keighley | 4.8 | 1.47 |

| | | | | |
|---|---|---|---|---|
| Mr. Smith Goes to Washington | 1939 | Capra, Frank | 5.9 | 1.62 |
| Grapes of Wrath | 1940 | Ford, John | 7.1 | 1.46 |
| His Girl Friday | 1940 | Hawks, Howard | 15.7 | 1.71 |
| Mildred Pierce | 1945 | Curtiz, Michael | 10.2 | 1.64 |
| Treasure Island | 1950 | Haskin, Byron | 5.73 | 1.63 |
| Prisoner of Zenda, The | 1952 | Thorpe, Richard | 7.6 | 1.2 |
| Darby O'Gill and the Little People | 1959 | Stevenson | 4.41 | 1.29 |
| Psycho | 1960 | Hitchcock, Alfred | 6.4 | 1.19 |
| Omen, The | 1976 | Donner, Richard | 5.6 | 1.29 |
| Rambo II: First Blood | 1985 | Cosmatos, George P. | 2.7 | 1.79 |
| Robocop | 1987 | Verhoeven, Paul | 3.4 | 2.23 |

In the above table, all the values of %VAI, excepting *Robocop*, are less than 2%, but when we move on to the table below including a selection of films and TV programs made after 1990, there are many examples with %VAI higher than 2%.

| Title | Year | Director | ASL | %VAI |
|---|---|---|---|---|
| Hard Boiled | 1992 | Woo, John | 2.6 | 2.63 |
| Natural Born Killers | 1994 | Stone, Oliver | 2.9 | 3.16 |
| NYPD Blue (Ep.7 season 1) | 1994 | Hoblit, Gregory | 4.62 | 2.46 |
| Breaking the Waves | 1996 | Von Trier, Lars | 9.1 | 2.08 |
| Face/Off | 1997 | Woo, John | 2.5 | 2.3 |
| Buffy the Vampire Slayer (Ep 7, Seas. 1) | 1997 | Brazil, Scott | 3.69 | 1.17 |
| Psycho | 1998 | Van Sant, Gus | 6 | 1.28 |
| Insider, The | 1999 | Mann, Michael | 5.1 | 1.69 |
| Blair Witch Project, The | 1999 | Myrick, D. & Sanchez E. | 16.1 | 4.16 |
| West Wing, The (Ep. 1, Season 1) | 1999 | Schlamme, Thomas | 5.20 | 1.28 |
| Sånger från andra våningen | 2000 | Andersson, Roy | 118.4 | 0.42 |
| Timecode | 2000 | Figgis, Mike | 5280 | 2.29 |
| Thick of It, The (1st. season) | 2005 | Iannucci, Armando | 5.08 | 3.58 |
| Mr. Magorium's Wonder Emporium | 2007 | Helm, Zach | 4.12 | 2.06 |
| Contagion | 2011 | Soderbergh, Steven | 6.8 | 1.24 |

Movement within the frame as measured by the VAI is caused by two conceptually separable things: the movement of the actors relative to the frame, and movement of the background relative to the frame. The latter is produced by movement of the camera in some way, either moving the camera support, or rotating the camera about its support by panning or tilting, or by both these sorts of movement simultaneously. The substantial increases in the VAI since 1990 in the table above, to the extent of almost doubling the maximum in *The Blair Witch Project*, are due to both factors. The manner of the camera movement also has an effect on the value of the VAI. The major distinction is whether the camera is mounted on a solid support, or hand-held. In the last thirty years the latter usually means balanced on the shoulder of the cameraman, but the use of a small camera entirely supported by the operator's hands has not completely vanished. Hand-held camera images always show a small amount of wobble of the lens direction over a few degrees. Steadicam filming, on the other hand, which nearly always makes up a substantial amount of the footage in action films in recent times, lacks these wobbles, and is hard to distinguish from footage shot with the

camera on a dolly. And it does not add to the VAI. Most of the films in the last table above have quite small amounts of true hand-held camera filming, with the exception of *Natural Born Killers, Breaking the Waves,* and *The Blair Witch Project*. In the last of these the hand-held look is part of the concept, as all the footage is supposed to have been shot by two amateur camera operators. I have also included above, for comparison, the movement index for an extremely long take art film from the other end of the movement spectrum. This is *Sånger från andra våningen (Songs from the second floor)* (2000), directed by Roy Andersson. Fairly inevitably, each scene in this film is made up of one shot, which lasts about 1 to 2 minutes, and is conducted nearly entirely in static Long Shot. There is also very little movement by the characters within the frame, and the result of this is a %VAI of 0.42, which is about as low as you can go and still call the result a movie. Also from 2000, we have Mike Figgis' *Timecode*, which is made up of four continuous shots, each lasting 88 minutes, of the simultaneous actions, shown simultaneously on screen as a quadrant polyptych. The hand-held camera movement and the actor movement throughout generate a high value of the %VAI of 2.29. This value, though not much more than half the value for *The Blair Witch Project*, is almost as high as the values for Paul Greengrass' Jason Bourne films.

Near the top of the high movement extreme, we also have the first season of the television series, *The Thick of It* (2005), written and directed by Armando Iannucci, which has extra added handheld camera wobble throughout, with a resulting %VAI of 3.58. *The Thick of It* also has a great deal of jump cutting within scenes, both time jumps and mismatches of the actors' position and movement. Iannucci has retreated a little from the extremes in these respects in his subsequent films and television work.

Looked at historically, the amount of movement within the frame was already beginning to increase in the 'eighties, as indicated by the %VAI value of 2.23 for *Robocop,* and this continued into the 'nineties with the increasing Hollywood interest in Hong Kong action movies. These did not use significant quantities of hand-held camera to cover the action scenes, just more actor movement and conventional camera movement than usual. An alternative addition to hand-held movement was developed for the American TV series *NYPD Blue*, with small pans and tilts applied to the shot with the camera on a proper support (dolly or tripod). These small movements were not called for to keep the actors movements centered in the frame, which was traditional filmic practice, as I have described on pages 271-2 of my article "Stylistic Analysis of Dramatic Television Programs" republished in my Moving Into Pictures (Salt, B. **2006b**). Gary Rhodes in his book with Robert Singer "Consuming Images" (Rhodes, G. & Singer, R. **2020**) has suggested that this technique is derived from the American TV commercials that Leslie Dektor made from 1987 onwards. The extensive hand-held work in *Natural Born Killers* is clearly part of the general assault on the audience intended by its makers, so by the year 2000 the way was prepared for even more camera wobble. Paul Greengrass's first try at this in *Bloody Sunday* is not that remarkable with a %VAI of 2.52, particularly since it was not associated with fast cutting (ASL = 8.9 sec.). But in 2002, Hollywood action subjects like *The Bourne Supremacy* had to be cut fast, and it is that conjunction of fast cutting and visual activity that drew people's eyes, as already remarked. All in all, the Visual Activity Index is a major and highly useful metric for film style. And the values it gives line up quite well with my subjective impressions of the amount of movement within the frame of different films.

**Look at me, Ma!**

Pushing stylistic features to an extreme to attract attention has been part of artistic endeavour for several hundred years, at least since the Mannerist period in Italian Renaissance painting, but it has not figured extensively in commercial film-making until recent decades. Besides the conjunction of fast cutting and visual activity that has just been discussed, there are other stylistic variables that have not been noticed. One is the increase in average saturation (brightness) of the colours in colour films. Although the actual reproduction of colour in films is practically conducted through the regulation of the amount of the red, green and blue light primaries, colour can also be completely described using the hue, saturation and value triad -- roughly speaking, the spectral wavelength, intensity, and amount of white light added to the colour. The saturation variable has possible values ranging between 0 and 1. And as with the Visual Activity Index, a computer program can average the saturation over each frame of the film, and then make an average for the whole film. This method was again suggested by James Cutting, in Brunick, K. L. & Cutting, J. E. (**2014**). Cutting and Brunick did not publish any results from this approach, but my application of the technique gives numerical results for the colour films in my sample, as shown in the following tables.

| Title | Year | Director | Average Saturation |
|---|---|---|---|
| Derailed | 2002 | Misiorowski, Bob | 0.38 |
| Bloody Sunday | 2002 | Greengrass, Paul | 0.19 |
| Bourne Identity, The | 2002 | Liman, Doug | 0.37 |
| Bourne Supremacy, The | 2004 | Greengrass, Paul | 0.35 |
| Bourne Ultimatum, The | 2007 | Greengrass, Paul | 0.46 |
| Shoot 'Em Up | 2007 | Davis, Michael | 0.55 |
| Bourne Legacy, The | 2012 | Gilroy, Tony | 0.43 |
| Captain Phillips | 2013 | Greengrass, Paul | 0.47 |
| Jason Bourne | 2016 | Greengrass, Paul | 0.31 |
| | | | |
| Snow White and the Seven Dwarfs | 1937 | Hand, David | 0.33 |
| Adventures of Robin Hood, The | 1938 | Curtiz & Keighley | 0.40 |
| Treasure Island | 1950 | Haskin, Byron | 0.39 |
| Prisoner of Zenda, The | 1952 | Thorpe, Richard | 0.26 |
| Darby O'Gill and the Little People | 1959 | Stevenson, Robert | 0.32 |
| Omen, The | 1976 | Donner, Richard | 0.43 |
| Rambo 2:First Blood | 1985 | Cosmatos, George P. | 0.31 |
| Robocop | 1987 | Verhoeven, Paul | 0.29 |
| Hard Boiled | 1992 | Woo, John | 0.38 |
| Natural Born Killers | 1994 | Stone, Oliver | 0.38 |
| NYPD Blue Ep.7 Season 1 | 1994 | Hoblit, Gregory | 0.27 |
| Breaking the Waves | 1996 | Von Trier, Lars | 0.49 |
| Face/Off | 1997 | Woo, John | 0.36 |
| Buffy the Vampire Slayer (Ep 7, Season 1) | 1997 | Brazil, Scott | 0.56 |

| | | | |
|---|---|---|---|
| Psycho | 1998 | Van Sant, Gus | 0.30 |
| Insider, The | 1999 | Mann, Michael | 0.39 |
| Blair Witch Project, The | 1999 | Myrick, D. & Sanchez, E. | 0.26 |
| West Wing, The (Ep. 1, Season 1) | 1999 | Schlamme, Thomas | 0.49 |
| Mr. Magorium's Wonder Emporium | 2007 | Helm, Zach | 0.58 |
| Transformers: Revenge of the Fallen | 2009 | Bay, Michael | 0.56 |
| Contagion | 2011 | Soderbergh, Steven | 0.50 |
| Shape of Water, The | 2017 | del Toro, Guillermo | 0.64 |

You can see that up to 1997 all the saturation values fall below 0.5. This corresponds to the reproduction of colours to generally correspond as closely as possible to what they were in the scene photographed by the camera. After that there was a gradual introduction of an all-digital work flow for post-production between the end of the previous millennium and the present day. With purely photo-chemical film printing, it *was* possible to increase the saturation of colours a bit more than the standard default values, but with the introduction of digital intermediate treatment, it became easy to change the colour saturation to any value desired. This possibility was not used in most films, but a few films were now given a saturation greater than 0.5. The intentional use of increased colour saturation for expressive purposes can be seen in the 0.58 value for *Mr. Magorium's Wonder Emporium*, which deals with events in a magical toy shop. The saturation value of 0.56 for *Shoot 'Em Up* could be considered to underline the general comic book exaggeration of this project, as could the same value of 0.56 for *Buffy the Vampire Slayer. The Shape of Water* works the same fantasy comic-book territory, and takes colour saturation to a new high of 0.64 with the added help of extensive lighting of the scenes with coloured gels.

There are other important stylistic variables for which the average and limiting values have changed appreciably over recent decades, such as the increasing darkness of the image, which I first mentioned in *Film Style & Technology* on Page 377. James Cutting and his associates have since done a quantitative analysis of the increased average darkening of the film image in (Cutting, J. Brunick, K. DeLong,J, Iricinschi, C. Candan, A. **2011**)

Another major variable is the film-maker's concept of filmic continuity, which amounts to the obviousness of the connection between one shot and the next. In general, this quantity has decreased over the last sixty years, or to put it another way, discontinuity has increased. I have considered this in terms of shot and scene transitions in 'The Shape of 1979' (Salt, B. **2014)**

Yet another feature of film construction that has increased over the last twenty years is the amount of dialogue in feature films. This can be measured by dividing the total number of words spoken in a film by the length of the film in minutes, which gives a new quantity that I call Words per Minute (WPM). A simple way to get an estimate of the number of words in the dialogue of a film is from the English subtitle files on web sites like *opensubtitles.org*. After the time-code data has been removed by a computer program like JUBLER, the words can be counted in any word processing program. This method is subject to a small amount of error, as not quite all dialogue in films is rendered in subtitles. Around several percent is always omitted, but the values obtained with my method suffice to get a good idea of the trends in this variable. A selection of WPM values for films from 1931 to the present follows.

| Film | Year | Director | Writer | WPM |
|---|---|---|---|---|
| Front Page, The | 1931 | Milestone, Lewis | Hecht & MacArthur | 161 |
| Monkey Business | 1931 | McLeod, Norman Z. | Perelman, S.J. & Johnstone, W. | 170 |
| Crime Without Passion | 1934 | Hecht & MacArthur | Hecht & MacArthur | 116 |
| Twentieth Century | 1934 | Hawks, Howard | Hecht & MacArthur, Mulholland | 147 |
| It Happened One Night | 1934 | Capra, Frank | Riskin, Robert& Adams, S.H | 109 |
| Mr. Deeds Goes to Town | 1936 | Capra, Frank | Riskin, Robert & Kelland, S.B. | 130 |
| My Man Godfrey | 1936 | LaCava, Gregory | Ryskind, Morrie & Hatch, Eric | 155 |
| Block-Heads | 1938 | Blystone, John G. | Rogers, etc. | 87 |
| Stagecoach | 1939 | Ford, John | Nichols, Dudley | 78 |
| His Girl Friday | 1940 | Hawks, Howard | Hecht & MacArthur & Lederer | 173 |
| Palm Beach Story, The | 1942 | Sturges, Preston | Sturges, Preston | 159 |
| Roxie Hart | 1942 | Wellman, William | Watkins & Johnson | 133 |
| Thirty Seconds Over Tokyo | 1944 | LeRoy, Mervyn | Trumbo, Dalton | 97 |
| Fixed Bayonets | 1951 | Fuller, Sam | Fuller, Sam | 83 |
| Artists and Models | 1955 | Tashlin, Frank | Baker, Herbert, Kanter, Tashlin | 98 |
| Iron Petticoat, The | 1956 | Thomas, Ralph | Hecht, Ben | 114 |
| Advise & Consent | 1962 | Preminger, Otto | Mayes, Wendell & Drury, Allen | 113 |
| Kiss Me, Stupid | 1964 | Wilder, Billy | Wilder & Diamond | 108 |
| Front Page, The | 1974 | Wilder, Billy | Hecht & MacArthur | 149 |
| Dangerous Liaisons | 1988 | Frears, Stephen | Hampton, Christopher | 79 |
| Hard Boiled | 1992 | Woo, John | Woo, John & Wong, Barry | 43 |
| Few Good Men, A | 1992 | Reiner, Rob | Sorkin, Aaron | 118 |
| American President, The | 1995 | Reiner, Rob | Sorkin, Aaron | 137 |
| Wag the Dog | 1997 | Levinson, Barry | Mamet, David & Henkin, Hilary | 119 |
| Bulworth | 1998 | Beatty, Warren | Beatty & Pikser | 129 |
| West Wing (Ep. 1,2,3) | 1999 | Schlamme, Thomas | Sorkin, Aaron | 119 |
| Insider, The | 1999 | Mann, Michael | Roth, Eric & Mann, M. | 87 |
| EdTV | 1999 | Howard, Ron | Ganz & Mandel, Gaudreault etc. | 127 |
| Gilmore Girls (Ep.2, S 1) | 2000 | Sanford, Arlene | Sherman-Palladino, Amy | 148 |
| Mr. Deeds | 2002 | Brill, Steven | Riskin, Robert, Herlihy, Tim | 108 |
| Derailed | 2002 | Misiorowski, Bob | Anderson, Gierack, Davidson | 52 |
| Wedding Crashers | 2005 | Dobkin, David | Faber, Steve & Fisher, Bob | 142 |
| 40-Year-Old Virgin, The | 2005 | Apatow, Judd | Apatow, Judd | 159 |
| Evan Almighty | 2007 | Shadyac, Tom | Oedekerk, Steve | 104 |
| Shoot 'Em Up | 2007 | Davis, Michael | Davis, Michael | 64 |
| In the Loop | 2009 | Ianucci, Armando | Ianucci, etc | 171 |
| Social Network, The | 2010 | Fincher, David | Sorkin, Aaron | 147 |
| Avengers Assemble | 2012 | Whedon, Joss | Whedon, Joss | 71 |
| Newsroom, The (Ep.1) | 2012 | Mottola, Gregg | Sorkin, Aaron | 169 |
| Veep (Ep. 1,2,3,4) | 2012 | Ianucci, Armando | Ianucci, etc | 190 |

| | | | | |
|---|---|---|---|---|
| Internship, The | 2013 | Levy, Shawn | Vaughan, Vince & Stern, Jared | 178 |
| Gone Girl | 2014 | Fincher, David | Flynn, Gillian | 104 |
| Steve Jobs | 2015 | Boyle, Danny | Sorkin, A. & Isaacson | 152 |
| Death of Stalin, The | 2017 | Ianucci, Armando | Ianucci, etc | 117 |

My interest here is in the historical progression of the highest values of WPM, though a number of films with more typical values are included. Right from the beginning of the sound film period there were some films with quite high WPM values, and these exceptional examples rose rapidly to a new high in 1931 with the Marx brothers' *Monkey Business*, at 170 WPM and *The Front Page* at 161 WPM. Both of these films, and some others in the list, carry the stamp of the New York stage, and one of its major figures, George S. Kaufman. Kaufman directed *The Front Page* in its famous initial stage production in 1928, with high speed and overlapping dialogue. These features are reproduced in Lewis Milestone's film of 1931. The original authors of *The Front Page*, Ben Hecht and Charles MacArthur, did not manage the same sort of dialogue speed when they turned to directing as well as writing their own films, as instanced by *Crime Without Passion* in 1934. Here they fell back to a more normal 116 WPM. Howard Hawks did better with their stage play, *Twentieth Century*, when he filmed it the same year, and after that in 1940 took their dialogue from *The Front Page*, and gave it a sex change into *His Girl Friday*, with a new high of 173 WPM. The next challenger for the speed crown was Preston Sturges, who also came from the Broadway theatre of the late 'twenties, and who worked his way up to 159 WPM for The *Palm Beach Story* through the series of films he wrote and directed in Hollywood. Billy Wilder took his 1974 remake of *The Front Page* slower (149 WPM) than the 1931 film, but that was his way of handling comedy, with more time to milk the reactions of the characters. The Words Per Minute count obviously has two determinants: the number of words written in the script for the scene, and the speed at which these words are spoken. These two quantities are difficult to separate, and I will not try to do so here, though in the case of a remake using the same dialogue this can be done. The remake of *Psycho* (1960) created by Gus van Sant in 1998 has the dialogue delivered about 10% slower than in the original Hitchcock version. Action subjects have much less dialogue than ordinary dramatic films, so Words Per Minute down towards 60 WPM, or even lower, are usual for them.

A renewed interest in pushing the speed of dialogue higher emerged in 1995 with Rob Reiner's *The American President* (137 WPM), written by Aaron Sorkin, and more people joined in this time around, both in film and television. Aaron Sorkin's own TV series, *The West Wing*, was surpassed by Amy Sherman-Palladino's *Gilmore Girls* (148 WPM), as was noticed at the time. The current winner seems to be Armando Ianucci, who as writer and director was at 169 WPM already in 2005 with the first TV season of *In the Thick of It*, and by 2012 had worked up to 190 WPM with the first four episodes of *Veep*. Animated features show the historical trend to more words per minute particularly clearly, as shown in the following list.

| Film | Year | Director | Writer | WPM |
|---|---|---|---|---|
| Snow White and the Seven Dwarfs | 1937 | Hand, David | Sears, Ted, etc. | 55 |

| | | | | |
|---|---|---|---|---|
| Mr. Bug Goes to Town | 1941 | Fleischer, Dave | Fleischer, Gordon, Pierce, etc | 67 |
| Cinderella | 1950 | Geronomi, Jackson & Luske | Sears, Ted, etc. | 73 |
| Flintstones, The (Ep.1 Season 1) | 1960 | Hanna & Barbera | Maltese, Michael | 98 |
| Jungle Book, The | 1967 | Reitherman, Wolfgang | Clemmons, Larry, etc. | 87 |
| Robin Hood | 1973 | Reitherman, Wolfgang | Clemmons, Larry, etc. | 70 |
| Charlotte's Web | 1973 | Winick, Gary | Grant, S. & Kirkpatrick, K. | 94 |
| Rescuers, The | 1977 | Reitherman, Wolfgang | Clemmons, Larry etc. | 61 |
| Aladdin | 1992 | Clements, R. & Musker, J. | Clements, R. & Musker, J. | 98 |
| Finding Nemo | 2003 | Stanton, A. & Unkrich, Lee | Stanton, Peterson, Reynolds | 99 |
| Shark Tale | 2004 | Bergeron, Jenson, Letterman | Wilson, M., Letterman, R. etc. | 120 |
| Lego Movie , The | 2014 | Miller, C. & Lord, P. | Miller, C. & Lord, P. | 115 |
| Finding Dory | 2016 | Stanton, A. & MacLane, A. | Stanton, Andrew | 123 |
| Lego Batman Movie, The | 2017 | McKay, Chris | Grahame-Smith & McKenna | 127 |

Before *Snow White*, the first animated sound feature, there were of course short animated films. A quick glance at early Disney sound shorts starts with *Steamboat Willie* (1928) which has no clearly intelligible speech, but a year later *Karnival Kid* manages 17 WPM of real words over its 7 minute duration, and by 1938 *The Brave Little Tailor* scores 20 WPM. Once into feature animations, the amount of dialogue jumps straight away to 55 WPM in *Snow White*, and then steadily rises up into the 21st. Century. The single example included from the beginning of television animation in 1960, *The Flintstones*, shows the well-known basic characteristic of this genre; people (or animals) standing around and jabbering at each other. I have analysed this aspect of animation in more detail in 'Counting in Ones and Twos', in my *Moving Into Pictures* (**Salt** 2006).

The interesting point about this high TV animation dialogue speed is that it had absolutely no effect on animated feature film dialogue for over thirty years. This is presumably because the best animators and directors despised TV animation, and occasionally said so. In the last twenty years, the dialogue in feature animations has however reached new excesses in the Lego films, which is only possible because the characters are continuously shouting to no-one in particular as they fly from one point to another. Of course, the Lego features could hardly be called real animation, as they basically just show solid blocks moving about.

## Conclusion

Seen in the large, the basic film constructional features such as Scale of Shot, POV shots, and Average Shot Length show statistical shifts over time. This is illustrated here in the case of ASL, with empirical evidence for the end of the speed-up in film cutting rates which happened over the fifty years from 1950 to 2000, and of how it has stalled since. As well as that, there are other more superficial stylistic features that also increase in amount over time, and these can be used by film-makers to create distinctive individual styles for their work. This has increasingly happened in the last twenty years, since the turn of the century, and I have shown this for the increase in the number of words spoken in films, and the saturation of colours in the film image. I doubt that all of

this matters much to the general film audience, but it should matter to those few people who seek and savour art in films.

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**The total collection of my ASLs can be freely downloaded as an Excel spreadsheet from the *starword.com* website, as can the PDFs for my books *Film Style and Technology: History and Analysis (3rd. edition)* and *Moving Into Pictures,* and also my more recent articles.**

**Barry Salt**, 2021

**Abstract**

The major shift in the feature film cutting rate over the sound film period is statistically investigated, with a demonstration of how this reduction in Average Shot Length (ASL) has stopped since around the year 2000. The way in which other stylistic features such as movement within the frame, colour saturation, and number of words spoken per minute have increasingly been used by film-makers over the last twenty years for stylistic differentiation in their work is also shown.