Cinemetrics – a bibliography

Mike Baxter[1], 16 Lady Bay Road, West Bridgford, Nottingham, NG2 5BJ, UK
(e-mail: michaelj.baxter@btconnect.com)

June 2014

Introduction

This is work in progress and will be added to from time to time and updated on my website, http://www.mikemetrics.com/. The original idea was to list cinemetric publications with a strong statistical component on the website, but the number is steadily increasing so it is going to be more efficient to make this available as a pdf file. I've written in more detail about the statistical aspects of cinemetrics elsewhere *Notes on Cinemetric Data Analysis*, in what is effectively a book that can be accessed from my website and academia.edu page for free, so I will keep this introduction fairly short.

The *Cinemetrics* website established by Yuri Tsivian in 2005 is important for many reasons. It draws some of its inspiration from the work of Barry Salt, particularly his 1974 paper listed below. This was well ahead of its time. A lot of the ideas it embodies couldn't easily be implemented with the computing power available at the time. This has now changed and *Cinemetrics* is one manifestation of this. Among other things it eases the problem of collecting data and interrogating it. There are issues about accuracy – the source material, frame-accurate measurement, the actual analysis of the data, and so on. The issues are being addressed.

One thing that interests me is the nature of publication. This is changing rapidly. What you might call 'conventional' journals that deal with film studies are frightened to publish anything involving quantitative ideas that the editors judge might scare, or be incomprehensible to, their readers. This is an understandable, if frustrating, point of view if you want to get ideas of the quantitative analysis of 'filmic analysis' into the public domain. I've experienced this and know I am not alone. A lot of what's listed below, for the reasons I've outlined above, is on the web rather than in journals. Apart from the people name-checked above there is an interesting body of work by Nick Redfern, and James Cutting and his colleagues. This will be obvious fron the Bibliography. The various people involved do not necessarily agree with each other's ideas (myself included) and there is a certain amount of what you might call 'combative' debate about this, a lot of which can be viewed on the *Cinemetrics* website.

In some ways this 'internal dissent' about quantitative methodology distracts from the possibility that the quantitative study of film can add to your knowledge about film. It does; it's just one way of looking at film; and how you rate it depends on what your interests are. The study of montage in early (the 1910s) film has benefited from quantitative analysis

---

[1]Emeritus Professor of Statistical Archaeology, Nottingham Trent University, UK

through the work of Yuri Tsivian and colleagues. If you want to see what some of this is, there are video presentations of talks at a conference sponsored by the Neubauer Collegium at the University of Chicago[2].

So I think this is all interesting; it is what academic study is about; you do things, sit back, and see what happens. The present paper is intended as a resource.

Bibliography

References

[1] Adams B., Dorai C. and Venkatesh S. (2000) Towards automatic extraction of expressive elements from motion pictures: Tempo. *IEEE International Conference on Multimedia and Expo, 2000, Vol. II*, 641-645.

[2] Adams B., Dorai C. and Venkatesh S. (2002) Formulating film tempo: the computational media aesthetics methodology in practice. In C Dorai and S Venkatesh (eds.) *Media Computing: Computational Media Aesthetics*. Norwell, MA: Kluwer Academic Publishers, 57-84.

[3] Adams B., Venkatesh S., Bui H.H. and Dorai C. (2005) A probabilistic framework for extracting narrative act boundaries and semantics in motion pictures. *Multimedia Tools and Applications* **27**, 195-213.

[4] Baxter M. (2012a) Film statistics: some observations,
http://www.cinemetrics.lv/dev/on_statistics.php

[5] Baxter M. (2012b) Film statistics: further observations.
http://www.cinemetrics.lv/dev/on_statistics.php

[6] Baxter M. (2012c) Picturing the pictures: Hitchcock, statistics and Film. *Significance* **9**, 5-9.

[7] Baxter M. (2013a) Lines, damned lines and statistics.
http://www.cinemetrics.lv/dev/on_statistics.php

[8] Baxter M. (2013b) Comparing cutting patterns a working paper.
http://www.cinemetrics.lv/dev/on_statistics.php

[9] Baxter M. (2013b) Cutting patterns in D.W. Griffiths Biographs: An experimental statistical study.
http://www.cinemetrics.lv/dev/on_statistics.php

[10] Baxter M. (2013d) On the distributional regularity of shot lengths in film. *Literary and Linguistic Computing*, doi:10.1093/llc/fqt041

---

[2]http://neubauercollegium.uchicago.edu/events/uc/Cinemetrics-Conference/

[11] Baxter M. (2013e) Evolution in Hollywood editing patterns? http://www.cinemetrics.lv/dev/Evolution_paper_for_Cinemetrics.pdf

[12] Buckland W. (2008) What does the statistical style analysis of film involve? A review of 'Moving Into Pictures. More on Film History, Style, and Analysis'. *Literary and Linguistic Computing* **23**, 219-230.

[13] Buckland W. (2009) Ghost director. In *Digital Tools in Media Studies*, M. Ross, M. Grauer and B. Freisleben (eds.), transcript Verlag, Bielefeld, Germany, 133-144.

[14] Cutting J.E., DeLong J.E. and Nothelfer C.E. (2010) Attention and the evolution of Hollywood film. *Psychological Science* **21**, 440-447.

[15] Cutting J.E., Brunik K.L. and DeLong J.E., (2011a) The changing poetics of the dissolve in Hollywood film. *Empirical Studies of the Arts* **29**, 149-169.

[16] Cutting J.E., Brunik K.L. and DeLong J.E., (2011b) How act structure sculpts shot lengths and shot transitions in Hollywood film. *Projections* **5**, 1-16.

[17] Cutting J.E., Brunik K.L. and DeLong J.E., (2012) On shot lengths and film acts: A revised view. *Projections* **6**, 142-145.

[18] Cutting J.E., Brunik K.L., DeLong J.E., Iricinschi C. and Candan A, (2011) Quicker, faster, darker: Changes in Hollywood film over 75 years. *i-Perception* **2**, 569-576.

[19] Cutting J.E., DeLong J.E. and Brunik K.L. (2011) Visual activity in Hollywood film: 1935 to 2005 and beyond. *Psychology of Aesthetics, Creativity, and the Arts* **5**, 115-125.

[20] Cutting, J. E. and Candan, A. (2013). Movies, evolution, and mind: From fragmentation to continuity. *The Evolutionary Review* **4**, 25-35.

[21] Cutting, J.E., Iricinschi C. and Brunick, K.L. (2013) Mapping Narrative Space in Hollywood Film. *Projections* **7**, 64-91.

[22] More on the evolution of popular film editing. http://www.cinemetrics.lv/dev/cuttingcinemetricx3.pdf

[23] DeLong J.E., Brunik K.L. and Cutting J.E. (2012) Film through the human visual system: finding patterns and limits. In *The Social Science of Cinema*, J.C. Kaufman and D.K. Simonton (eds.), Oxford University Press, New York, in press.

[24] DeLong, J.E. (2013) Horseshoes, handgrenades, and model fitting: the lognormal distribution is a pretty good model for shot-length distribution of Hollywood films. *Literary and Linguistic Computing*, doi:10.1093/llc/fqt030

[25] Grzybek P. and Koch V. (2012) Shot length: random or rigid, choice or chance? An analysis of Lev Kuleov's Po zakonu [By the Law]. In *Sign Culture. Zeichen Kultur*, E.W.B. Hess-Lüttich, ed., Königshausen & Neumann: Würzburg, 169-188.

[26] Han X,, Small S.D., Foster D.P. and Patel V. (2011) The effect of winning an Oscar award on survival: correcting for healthy performer survivor bias with a rank preserving structural accelerated failure time model. *The Annals of Applied Statistics* **5**, 746772.

[27] Manovich, L. (2013) Visualizing Vertov.
http://softwarestudies.com/cultural_analytics/Manovich.Visualizing_Vertov.2013.pdf

[28] Murtagh F., Ganz A. and McKie S, (2009) The structure of narrative: the case of film scripts *Pattern Recognition* **42**, 302-312.

[29] O'Brien C. (2005) *Cinema's Conversion to Sound*. Bloomington, IN: Indiana University Press.

[30] Redelmeier D,A. and Singh S.M. (2001) Survival in Academy Award-winning actors and actresses. *Annals of Internal Medicine* **134**, 955-62.

[31] Redelmeier D.A. and Singh S.M. (2006) Reanalysis of survival of Oscar winners. *Annals of Internal Medicine* **145**, 392393.

[32] Redfern N. (2009a) Shot length distributions in the Chaplin Keystones, http://nickredfern.files.wordpress.com/2009/09/nick-redfern-shot-length-distributions-in-the-chaplin-keystones1.pdf

[33] Redfern N. (2009b) The impact of sound technology on the distribution of shot lengths in motion pictures, http://nickredfern.files.wordpress.com/2009/09/nick-redfern-the-impact-of-sound-technology-on-hollywood-film-style1.pdf

[34] Redfern N. (2010a) Shot length distributions in the early films of Charles Chaplin, http://nickredfern.files.wordpress.com/2010/04/nick-redfern-shot-length-distributions-in-the-early-films-of-charles-chaplin.pdf

[35] Redfern N. (2010b) Shot length distributions in the films of Alfred Hitchcock, 1927 to 1931, http://nickredfern.files.wordpress.com/2010/05/nick-redfern-shot-length-distributions-in-the-films-of-alfred-hitchcock-1927-to-1931.pdf

[36] Redfern N. (2010c) Robust measures of scale for shot length distributions, http://nickredfern.files.wordpress.com/2010/07/nick-redfern-robust-measures-of-scale-for-shot-length-distributions.pdf

[37] Redfern N. (2010d) Shot length distributions in the short films of Laurel and Hardy, 1927 to 1933, http://nickredfern.files.wordpress.com/2010/10/nick-redfern-shot-length-distributions-in-the-short-films-of-laurel-and-hardy.pdf

[38] Redfern N. (2010e) Statistical analysis of shot types in the films of Alfred Hitchcock, http://nickredfern.files.wordpress.com/2010/11/nick-redfern-statistical-analysis-of-shot-types-in-the-films-of-alfred-hitchcock.pdf

[39] Redfern N. (2011a) Time series analysis of BBC News bulletins using running Mann-Whitney Z statistics, http://nickredfern.files.wordpress.com/2011/07/nick-redfern-time-series-analysis-of-bbc-news-bulletins1.pdf

[40] Redfern N. (2011b) Time series analysis of ITV news bulletins, http://nickredfern.files.wordpress.com/2011/11/nick-redfern-time-series-analysis-of-itv-news-bulletins.pdf

[41] Redfern N. (2012a) The lognormal distribution is not an appropriate parametric model for shot length distributions of Hollywood films. *Literary and Linguistic Computing*, doi:10.1093/llc/fqs066

[42] Redfern N. (2012b) The impact of sound technology on the distribution of shot lengths in Hollywood films, 1920-1933. *CINEJ Cinema Journal* **2.1**, DOI 10.5195/cinej.2012.50 http://cinej.pitt.edu/ojs/index.php/cinej/article/view/50/195

[43] Redfern N. (2012c) Exploratory data analysis and film form: The editing structure of slasher films, http://nickredfern.files.wordpress.com/2012/05/nick-redfern-the-editing-structure-of-slasher-films.pdf

[44] Redfern, N. (2012d) Robust time series analysis of ITV news bulletins, http://nickredfern.files.wordpress.com/2012/04/nick-redfern-robust-time-series-analysis-of-itv-news-bulletins.pdf

[45] Redfern, N. (2012e) The average shot length as a statistic of film style, http://www.cinemetrics.lv/dev/on_statistics.php

[46] Redfern, N. (2012f) Robust estimation of the modified autoregressive index for high grossing films at the US box office, 1935-2005. http://nickredfern.files.wordpress.com/2012/11/nick-redfern-the-mar-index-for-hollywood-films1.pdf

[47] Redfern, N. (2012g) Correspondence analysis of genre preferences in UK film audiences. *Participations* **9**, 45-55.

[48] Redfern, N. (2013a) An introduction to using graphical displays for analyzing the editing structure of motion pictures. http://www.cinemetrics.lv/dev/on_statistics.php

[49] Redfern, N. (2013b) Time series clustering and the analysis of film style. http://www.cinemetrics.lv/dev/on_statistics.php

[50] Redfern, N. (2013c) Film style and narration in *Rashomon. Journal of Japanese and Korean Cinema* **5**, 21-36.

[51] Redfern, N. (2013d) Film studies and statistical literacy. *Media Education Research Journal* **4**, 58-73.

[52] Redfern, N. (2014a) The structure of ITV news bulletins. *International Journal of Communication* **8** (2014), 15571578.

[53] Redfern, N. (2014b) Quantitative methods and the study of film. http://nickredfern.files.wordpress.com/2014/05/nick-redfern-quantitative-methods-and-the-study-of-film.pdf

[54] Salt B, (1974) Statistical style analysis of motion pictures. *Film Quarterly* **28**, 13-22.

[55] Salt B, (1976) Film style and technology in the thirties. *Film Quarterly* **30**, 19-32.

[56] Salt B, (1977) Film style and technology in the forties. *Film Quarterly* **31**, 46-57.

[57] Salt, B. (1996) Early German film: the stylistics in comparative context. In *A Second Life: German Cinema's First Decades*, T. Elsaesser (ed), Amsterdam University Press, Amsterdam, 225-236.

[58] Salt B. (2004) The shape of 1999: the stylistics of American movies at the end of the century. *New Review of Film and Television Studies* **2**, 61-85.

[59] Salt B. (2006) *Moving Into Pictures.* Starword, London.

[60] Salt B. (2009a) *Film Style & Technology: History & Analysis, 3rd edition.* Starword, London, 2009.

[61] Salt B. (2009b) The shape of 1959. *New Review of Film and Television Studies* **7**, 393-409.

[62] Salt, B. (2010) Speeding up and slowing down. http://www.cinemetrics.lv/salt_speeding_up_down.php

[63] Salt, B. (2011a) The metrics in cinemetrics. http://www.cinemetrics.lv/metrics_in_cinemetrics.php

[64] Salt, B. (2011b) Reaction time: how to edit movies. *New Review of Film and Television Studies* **9**, 341-357.

[65] Salt B. (2012) Graphs and numbers. http://www.cinemetrics.lv/dev/on_statistics.php

[66] Salt B. (2013) Lines and Graphs. http://www.cinemetrics.lv/dev/on_statistics.php

[67] Salt B. (2014) Salt on Baxter on Cutting. http://www.cinemetrics.lv/dev/CutThoughtC.pdf

[68] Schaefer R.J. and Martinez T. (2009) Trends in network news editing strategies from 1969 through 2005. *Journal of Broadcasting and Electronic Media* **53**, 347-364.

[69] Sylvestre M-P., Huszti E and Hanley J.A. (2006) Do Oscar winners live longer than less successful peers? A reanalysis of the evidence. *Annals of Internal Medicine* **145**, 361-363.

[70] Taskiran, C. and Delp, E. (2002) A study on the distribution of shot lengths for video analysis. *SPIE Conference on Storage and Retrieval for Media Databases 2002*
http://www.ctaskiran.com/papers/2002_ei_shotlen.pdf

[71] Tsivian Y. (2005) Editing in *Intolerance.* In *The Griffith Project, Volume 9 (1916-18),* ed. P. Cherchi Usai, London: BFI Publishing, 52-57.

[72] Tsivian Y. (2009) Cinemetrics, part of the humanities' cyberstructure. In *Digital Tools in Media Studies: Analysis and Research: an Overview,* B. Freisleben, J. Garncarz and M. Grauer (eds.), Transcript Verlag, Bielefeld, 93-100.

[73] Vasconselos N. and Lippman A. (2000) Statistical models of video structure for content analysis and characterization. *IEEE Transactions on Image Processing* **9**, 3-19.

[74] Wolkewitz M., Allignol A., Schumacher M. and Beyersmann J. (2010) Two pitfalls in survival analyses of time-dependent exposure: a case study in a cohort of Oscar nominees. *The American Statistician* **64**, 205-211.