

## The works: A cut above

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**Shot analysis of movies is a laborious business - but not if you have the excellent TOKI Shot, which can automatically detect the cuts in a movie.**

Euphemisms can be valuable, but too often get in the way of real debate. If you're interested in the language of film, you may have come across Barry Salt's straight talking. In his book, *Film Style & Technology: History & Analysis* (ISBN 0 9509066 2-X), Salt takes an excoriating blast against the hokum that purports to be much of the theory of film. He's one of the few researchers, who has taken the trouble to analyse the shot structure of movies.

Salt did this crucial work using a stop-watch and film viewer, manually timing and analysing every shot for 30 minutes or more of several thousand movies. Although he insists this isn't difficult, it's clearly laborious and error-prone. With so many films on DVD, there must be an easier way. Unfortunately, versatile though DVDs are, they aren't suited to this sort of precision work: interesting movies, such as Tom Tykwer's ingenious *Run Lola Run*, may insert just two or three frames of a particular shot, and shuttling a DVD repeatedly backwards and forwards a frame at a time is clumsy at best.

There are also strong grounds for expecting help from a pair of G5 processors. Some cuts between shots may be tricky to detect, but most should be capable of automatic recognition. Having worked with machine vision, I knew it should be straightforward to tell when successive frames switch from, say, a chiaroscuro of Franka Potente to her character's father's head and shoulders. So rather than having to step carefully through hours of movie identifying every cut by eye, software should be able to suggest where each cut occurs from frame content analysis.

I then trawled around for a product to perform semi-automatic shot analysis of QuickTime movies, as might be extracted from DVDs. Although there were some intended for observational videos, and one that was clearly seriously expensive, nothing looked as if it would cut the mustard, so to speak. Just as I had started to roll my own, I came across TOKI Shot ([www.tokitest.com](http://www.tokitest.com)), initially via a sister product update announced on VersionTracker. After parting with just £92, I tested it on my own movies and quickly realised that this was what I had been looking for.

Once massaged into a suitable QuickTime format, TOKI Shot was happy to open a movie.

Clicking on its Analysis tool, it initially splits it into far too many shots, but this sensitivity is then tuned using the Detection tool. The aim is to get the automatic detection of cuts between shots to be as accurate as possible before resorting to manual corrections. Finally, you feed the film through a virtual Moviola showing the current frame plus or minus 5. When you find a cut the automatic-detection system missed, you just click on the Insert button. If it has mistakenly put in a cut where there is none, click the Delete button.

Although this does take a little while, it's frame-perfect, and reveals fascinating insights into the subject movie. For example, about four minutes 46 seconds into *Run Lola Run*, there's a wonderful ultra-fast tracking shot that apparently takes us from a satellite view of the city (a bit like Google Earth) down to an oblique aerial, 'through' a

window with a concealed cut, and down a corridor to reach the iconic red phone some seven seconds later. Another sleight of film occurs at 12 minutes 25 seconds, as Lola starts her first run and apparently passes straight through the camera with the aid of another cut. In these and other cases, TOKI Shot shows clearly the cunning illusion created by Frank Griebe's photography and Mathilde Bonnefoy's editing.

I am sure that Barry Salt would have loved to have been armed with a Mac and TOKI Shot, and would have been forthright in his approval.