

## The use of 3D effects in Arab cinema

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### Abstract

Stereoscopic cinema has seen a surge of activity in recent years, and for the first time all of the major Hollywood studios released 3-D movies in 2009. This is happening alongside the adoption of 3-D technology for sports broadcasting, and the arrival of 3-D TVs for the home. Two previous attempts to introduce 3-D cinema in the 1950s and the 1980s failed because the contemporary technology was immature and resulted in viewer discomfort. But current technologies – such as accurately-adjustable 3-D camera rigs with onboard computers to automatically inform a camera operator of inappropriate stereoscopic shots, digital processing for post-shooting rectification of the 3-D imagery, digital projectors for accurate positioning of the two stereo projections on the cinema screen, and polarized silver screens to reduce cross-talk between the viewers left- and right-eyes – mean that the viewer experience is at a much higher level of quality than in the past. Even so, creation of stereoscopic cinema is an open, active research area, and there are many challenges from acquisition to post-production to automatic adaptation for different-sized display. This chapter describes the current state-of-the-art in stereoscopic cinema, and directions of future work.

**Keywords:** 3D cinema, Electronic cinema, Montage, Effects, and transitions.

### I. Cinema and stereoscopic cinema

Cinema as a branch of art developed from moving images. Sometimes, it is also referred to as cinematograph (from French cinematographe) or cinematography. Cinema was invented in the late XIX century and became extremely popular in XX.

The term “cinema” includes both the cinema as a kind of modern art, in which works are created by using moving images, and the film industry, the economic sector that provides, produces and promotes films and cartoons showing these works for the audience.

In cinematograph, works of art are created by application of some special film technologies. A special branch of humanities studies the cinema and filmmaking. We can find a lot of various genres, in which feature and documentary films may appear.

Stereoscopic cinema is a special displaying system that simulates the third dimension, or, in

other words, it causes the illusion of depth for the viewer. It is based on the phenomenon of binocular human vision.

The method usually involves the simultaneous shooting with two synchronized cameras with identical specifications that are located next to each other, sometimes at an angle of 90 degrees (in the second case, mirrors can be applied). Besides, there can be used a specialized camera with two lenses, spaced at a distance 64 mm.

When viewing, each eye of the spectator sees only the intended portion of a scene simultaneously; as a result, the visual area of the cortex in the brain perceives these images as one, which looks three-dimensional.

Modern computer technologies allow to create pseudo-stereo images using computer graphics, without the use of stereo cameras.

The terms "3-demention graphics" (3D graphics) and "3D cinema" describe fundamentally different phenomenon and

technologies. The very definition of "three-dimensional" in respect to the graphs is associated with the use of the media's application of the term "3D" to the stereoscopic technologies along with three-dimensional computer graphics, despite the lack of similarity between these areas.

## 2. Electronic (digital) cinema

Technologically it is a completed digital process of production, distribution and display of movies. The transition of all technical base of cinema to digital equipment is not only economically advantageous, but also provides new opportunities, previously unavailable in traditional cinema.

If we compare digital and traditional film cinema in respect of the prospects of their development, we can see, that the image quality in different developed and implemented digital and film cinema as follows. The electronic digital systems based on standard high-definition television (HDTV), some respects are superior and in others are inferior to systems based on the use of 35 mm.

In general, the image quality of the system are close to each other and almost equal. Thus, in connection with the said above some directors films, experts and spectators prefer electronic cinema in HDTV, others - 35-mm film cinema. The best is the mixed (intermediate) system of cinema that contains the consecutive segments like electronic digital and film, the image quality is almost equivalent to both the specified standards HDTV and 35-mm systems.

The resolution of the best 35mm film negatives, expressed in pixels, in the terms of the image contrast is only slightly inferior to the resolution of the CCD cameras HDTV (1920x1080). The positive resolution of 35 mm films, expressed in pixels, in the terms of the image definition, exceeds the resolution of pi light modulators projectors.

However, the specified mixed systems (from shooting to projection), as well as the other systems have similar resolution values calculated in the terms of the sharpness of the image.

## 3. Montage

A piece of a film (picture area), shot mostly from one fixed point and displayed on the screen between two other images, is referred to as a splicing unit (frame). Its length varies from one exposure to tens of meters.

If a piece of a film, shot from one point, is cut when montaging into several parts and then glued in between the other pieces, then each of these parts will also be a separate splicing unit – frame.

But splicing as a creative process is much more complex than simply "cutting and gluing". Challenges and opportunities of the real montage is considerably more difficult and more interesting.

Getting to the splicing of the episodes, we must first be able to assess the footage, to link one scene with another, so that the audience could better understand the plot.

In this case no matter how small splicing piece is (the frame), the spectator should see the idea for which this frame is shown in the course of montage. It is important to show continuity of actions and to draw the spectator's attention to the contents of the episode or scene.

The splicing shall:

- 1) direct the spectator's attention on the main action, removing all the unimportant details;
- 2) help the spectator in the perception of the contents, to facilitate the comprehension of what is happening on the screen;
- 3) make an emotional impact on the spectator, on his imagination with a particular interchange of frames taken with different of pace intraframe actions or other points, etc.

Technologies and techniques of montage.

Prior to splicing of individual scenes all the shot material is usually seen on the screen; in sound films the soundtrack is to be simultaneously listened to. Then comes the selection of material and gluing pieces in the order in which they shall subsequently be mounted.

The best variants of duplicates that will be included in the final cut shall be selected. The best should be considered the duplicate, which combines the most successful work of the actors,

the director and the operator. Sometimes frames, that are not excellent for expositive qualities, are left for montage because of very good actors' playing.

But, anyway, any such "loss" of one of the elements of cinematic art must be compensated by other means of expression, to the artistic and emotional quality of the scene and the film as a whole is not lost.

Working on film montage, one should always refer to the process as removing all the excess unnecessary that interferes with straight, clear perception of the contents and action.

The material is usually chosen by means of repeated viewing of episodes and the film in general. In order to choose for the final creative assembly all most interesting episodes, should be guided about the following:

Only then the spectator will be able to respond correctly to each spliced frame, if it is expressive, understandable, has open contents and expressive cast action.

- Individual shots of episode must have the same fine composition, or, as they say, "be mounted on light and composition", i.e. to have a single the same line and construction.

You need to correctly convey the scenes from one mounting to another piece, that the spectator does not lose the plot line.

- It is necessary to maintain and unity of rhythm and timing within the cast actions. Only under this conditions the viewer will perceive the action smoothly, without jerks, and this in turn will help in better understanding of the plot.

- Different plans the speed of the main actors, which, of course, particularly closely, the viewer, should be the same.

- When working on a sound film sound plans of the same scene should be identical in musical quality and volume.

- Moving from plan to plan, it should be "cut motion" when it is still not finished ("mount on motion"). But at the end of the scene, episode or even a separate mounting of the phrase must be mounted so that the main characters of the game which mainly attracted the attention of the audience, finished his action.

Only when during the montage we find the required sequence of assembled pieces, it is possible to determine the exact length of each individual plan.

The scheme of montage should be thought over before the work and shall be accurately observed in all major parameters of montage, among which main - the plot meaning, which is, the sense and semantic basis.

Montage by meaning shall subordinate that by the rhythm, the light (in color films – by color etc.), montage by movement, composition and sound.

Considering all these signs of splicing, the cameraman when shooting shall remember that the simpler and clearer the composition of the shot is, the less is the number it various items, distracting the attention of the spectator, the larger the depicted scene are important elements, the shorter can be the installation plan. The pictures that are "clogged" (sometimes necessarily) with minor details require longer display on the screen in order to make the audience perceive them.

The types of montage.

The creative process of montage and its possibilities used by to the best masters, are studied and paid a lot of attention to. There is a number of interesting theoretical statements of the greatest masters like Eisenstein, Dovzhenko, Pudovkin - about the possibilities of this wonderful means of expression in cinematic art.

Just like in literature, in sequential description of steps in the situation, characters' actions to the reader is gradually revealed their images and characters, in a film work by splicing the mapping of a number of pictures carry the idea, content and characters for the audience.

Analysis of the many best films of the cinema masters allows us to define three basic techniques of montage.

1) Consistently-time montage.

In this case, the events on the screen are displayed in the order in which they occur in life. This delivery method can be called narrative, because it resembles the narrative form in literature.

2) A parallel montage.

The essence of this technique is that the individual scenes of the same activity interspersed with shots of another. This technique causes the viewer the impression of a simultaneous development of two parallel activities. It helps to focus the viewer's attention on one action, however emotionally prepare it for the perception of the other.

Here is an example of parallel montage. A young man hurries out. We can see at five minutes to seven on the clock. He is running down the metro escalator, runs to the train, but the doors are automatically closed in front of "the nose". The clock shows seven – his date hour.

A girl approached the scene of date (under the clock) stops, irritably shrugs. The young man runs out of the subway station, running to the post. The clock shows ten minutes past seven. He runs into the frame where she had been a girl, but she's gone. He is confused. At the back ground in the street – we can see disappearing figure of the girl.

In a parallel montage is possible such cases:

- a) the same scene at the same time;
  - b) different places, but at the same time;
  - in) different places and different times.
- 3) Associative montage.

This technique coordinates pictures, formally different in substance, often giving them a new meaning. In practice, associative editing is often used along with parallel. The alternation of separate pieces of different actions, different place, and sometimes even by time but bound by a single thought or any outward sign, the viewer is the new, associative perception.

Associative montage often helps to convey the content of a scene, episode or feature actor in a more pointed art form. An elementary example is the sequential showing of the rude, angry person, an angry chained dog ("Angry as a dog").

In such an montage appointment possible comparison and contrast on the original, when placed on the mount a number of objects though are purely external similarity, but in its inner meaning is quite different.

In this case, to achieve a more powerful effect. Not the merit of retaining the unity of visual

continuity, a similar building adjacent frames, the same lighting scheme, etc.

#### 4. Effects and transitions

The montage uses the inertia of the experience of the viewer, the associative memory of the brain, the ability of the audience about ways to guess on the basis of experience and logical to link it all into a single picture.

But the cinematic means of matching pieces taken separately and independent episodes and scenes not limited to the described methods of mounting. Very often the transitions are built using the gradual disappearance of the one image and the occurrence of the other.

Especially widely used technique called dimming.

It is possible to remove the fade when the image gradually appear from the darkness, or blackout, when the image goes dark. This technique gives the opportunity to create a time span that separates one episode from another. In some cases, the admission to the blackout as it can stop the action, putting the viewer that something is unfinished, unsaid.

The length of the blackouts and sags should be determined by the plot task facing the operator in each case. But as a general rule we can assume that brief moment, and flows more dynamic.

There are other techniques of cinematic transition from one episode to another. Widely used so-called blind, in which one image is as if displaced, is pushed to others. The curtain has a straight or a curve contour, which can be sharp or soft (blurred). Blinds are most often used when displaying changes of the scene; they replace blackout.

For display memories, dreams and the unreal world it is possible to apply some semi-transparent substance wedge. To lens camera, better slider or grooves, install a strip of glass coated with a thin layer of semi-transparent substance, is gradually coming "out".

Moving the strip in the desired direction, it is possible to obtain the image which seems to go "clouding" or comes "from the cloud".

A similar effect can be obtained by applying the "soap video"; on glass a small bristle face brush

to apply thin come down "" a layer of soap. A similar technique was successfully applied in the film "the Destiny of man", where the operator was taken to the "white wedge" a single image (action happening now) and the replacement was introduced more - the memory of war scenes.

One can obtain the specific effect of blinds-blackout without the use of any of the shooting techniques and technical devices for shooting the camera. At the end of the scene the actor may go directly into the camera to and the figure closes shooting lens. In the future you can go to the same (only in reverse) the appointment or to use the usual method of "fade", and start a new scene.

Nowadays the so-called outer aperture is almost never used when the image on the screen gradually equal to the circle from the edges to the center (or side) or, respectively, opens. The purpose of this procedure is to focus on a particular area of the picture to focus on particular details of the composition.

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