

A Study in Multimedia Design Applied to Film Editing to Construct a Multiple Plots Movie

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Abstract — Narrative has lead filmmaking since the first film was made until now. Digital technologies have become increasingly involved in filmmaking but without changing the single plot storytelling model of a filmmaking. The study proposed an intercut design using Multimedia technology to film editing providing multiple and variety plots in one film. The audiences can experience different plot to the film in every watch. The design concept and process are provided. Future development and recommendation are listed for widen the research area.

Keywords-Narrative; Film Editing; Plot; Multimedia Design

I. INTRODUCTION

A film, also called a movie or motion picture, is a series of still or moving images. It is produced by recording photographic images with cameras, or by creating images using animation techniques or visual effects [1][2]. Currently, the main concern of film industries is to apply new digital technology to increase audience numbers with expected creative taste [3].

The first film, *Arrival of a Train at La Ciotat* was a short French black-and-white silent documentary film directed and produced by August and Louis Lumiere, in 1895. The 50-second silent film showed the entry of a train pulled by a steam locomotive into a train station in the French coastal town of La Ciotat. The story goes that when the film was first shown, the audience was overwhelmed by the vivid moving image coming directly at them.

In the early days of film, editing as it is today was not used. When film first came out, most were used to make actualities [4]. The films were essentially just a short film of an actual event, such as a train passing by, or a ship pulling into the harbor. These films did not have much of a story contour. In 1903, things changed. Edwin S. Porter, the father of film editing [5][6], exhibited his film and told a story from multiple shots, rather than just a single shot where the whole story takes place in front of a stationary camera as the film's story progresses. Porter also defined a lot of film transitions, which are very important to film editing theory, earning him the title of the father of narrative film-making. Filmmakers later used editing to enhance their story [7]. Hitchcock's *Shadow of a Doubt* is one such example of how editing plays a huge role in the storytelling technique.

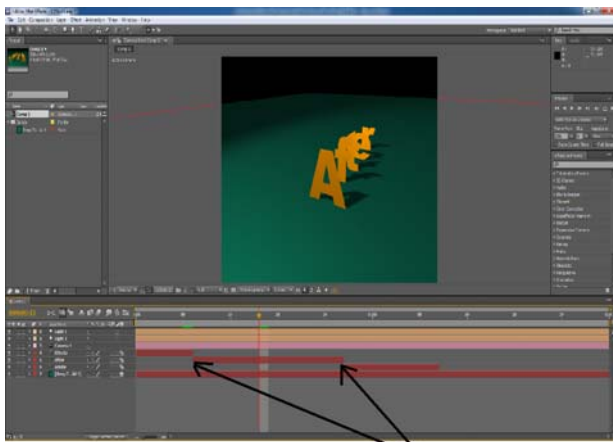
Influenced by Porter's achievement which indicated that one can view two unrelated shots and deduce the two are actually related, montage editing was introduced [8]. The montage editing technique uses different lenses and seemingly unrelated fragments, from which the audience can deduce the meaning, shooting order. Normally these shots in narrative film would not go together at all [9][10].

Film editing is part of the creative post-production process of filmmaking, and the film editor is the composer of film [11]. The term film editing is derived from the traditional process of working with film, but now it increasingly involves the use of digital technology [12][13]. Traditionally, the film editor works with the raw footage, selecting shots and combining them into sequences to create a finished motion picture. Film editing is described as an art or skill, the only art that is unique to cinema, separating filmmaking from other art forms that preceded it. Film editing is referred to the "invisible art" [14]. When well-executed, the audiences become so engaged in the plot that they are not even aware of the editor's work. On the most basic level, film editing is the art, technique, and practice of assembling shots into a coherent sequence. The job of an editor can be very simple like inserting a dissolve transition between two shots, but can also be a very complex process that alters the meaning of a scene, or an entire work. A film editor creatively works with the story to effectively "re-imagine" and even rewrite the film to craft a cohesive whole [15].

The initial stage of editing all films before was done by physically cutting and pasting together pieces of film, using a splicer, and threading the film on a machine such as the first movie editing machine [16], the Moviola (Figure 1). The device allowed the film editor to view film while editing. Today, most films are edited digitally [12][17] on systems such as After Effects (Figure 2) which allow the manipulation and re-arrangement of clips/shots to form a film. By import the clips then place the clips in the composition orderly to the digitally system, film editor starts trim the clips and output the sequence to a film followed by narrative storytelling of the film. The digital editing concept is similar to the initial stage editing one.



Figure 1. A Moviola stand-up editing machine used for 35mm film stock [18]



clips edited form a film

Figure 2, Film edited by digital technology

Audiences’ demands are always the main concern of film industry [3]. Attracting large audiences and consequently generating substantial profits are the main driving forces behind the making of films commercially [19]. Film studios have to compete for audiences, and use different methods to attract them, such as designing movie posters [20], to appeal to audience taste in an attempt to maximize attendance [21]. Digital technologies create the possibility of a paradigm shift in the creative and commercial potential of film.

II. CURRENT DESIGN AND ISSUES TO FILM EDITING

A. Current Design of Film Editing

Since film was invented, film editing was confined to narrative storytelling. Wu (2011) [22] indicated the editing method of films is not transformed when based on linear storytelling. The basic theory of film editing is selecting a cutting point: determining how long to hold a shot before something happens, and then connect to next shot [23]. Figure 3 shows the conception of traditional filmmaking.



Figures 3, Clips connected produce a film

B. Issues to film editing

“Every idea has equal worth”, Infinite Innovations (1999) [24]

The common method of writers to create a story is using brainstorming. Authors write without planning, allowing their stories to develop as they go and then return to fix up the story on later edits. The final story is a single plot in every reading. This structure leads the filmmaking/editing till now caused many good ideas of stories aspect were eliminated. Movies demand repeat viewings. A film comes out that commands the audiences’ attention, engagement, and stay for long time after its finished [25]. Cinema did have to compete for audiences and to differentiate audience taste in an attempt to maximize attendance [26]. The study contributed a new approach, multiple plots film, as a solution.

III. METHOD

The definition of a multiple plots’ film is a film which provides varied plot to audiences in each watch. For instance, the protagonist is shot on time 5’30” of the film in the first play. The protagonist is shooting someone on time 5’30” of the film in the second play. The plot intercut of multiple plots’ film is limitless depends on the developed varied plots. Figure 4 shows the concept of the multiple plots film in film editing.

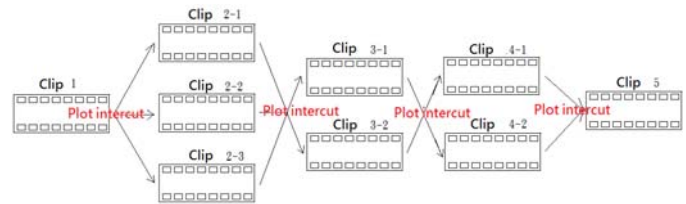


Figure 4, developed programme automatically selected next clip (clip 2-1 or clip 2-2 or clip 2-3) after clip 1, forming varied plots in each play

In attempting to construct a multiple plots film, multimedia technology Adobe Flash CS5 was used for developing the film edit method and creating the multiple plots film.

IV. PROJECT DEVELOPED AND INITIAL TEST





After building the construction concept of the multiple plots film, an experimental film project, Ugly Duck, with 12 (1x3x2x2x1=12) varied plots (see Figure 4) was created using Multimedia Software: Adobe Flash CS5. The programme was developed by Actionscript 3.0 for clip/plot intercut automatically. Figure 5 shows the work of the programme. Clips were of 3D animation created using Autodesk Maya 2011. Table 1 was the plots and clips’ screenshots for reference.





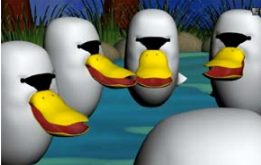
```

public class catchMovie extends MovieClip
{
    private var targetMC:MovieClip;
    private var catchTimer:Timer = new Timer(150,1);
    private var vid:Video = new Video();
    private var catchBmd:BitmapData;
    private var connection:NetConnection = new NetConnection();
    private var flvwidth:Number;
    private var flvheight:Number;
    private var CmaxEdge:Number;
    public function catchMovie(mc:MovieClip, flvURL:String, maxEdge:Number)
    {
        targetMC = mc;
        CmaxEdge=maxEdge
        connection = new NetConnection();
        catchTimer.addEventListener(TimerEvent.TIMER, catchMovieTimer);
        connection.addEventListener(NetStatusEvent.NET_STATUS, status);
        connection.connect(null);
        var ns:NetStream = new NetStream(connection);
        ns.addEventListener(NetStatusEvent.NET_STATUS, status);
        ns.client = {onMetaData:ns_onMetaData};
        ns.seek(100);
        ns.play(flvURL);
        ns.pause();
        vid.attachNetStream(ns);
    }
}
    
```

Figure 5, Programme for switching the clips/plots

TABLE I. PLOTS OF THE EXPERIEMENTAL FILM

Clip	Plot	Screenshot
1	It's a beautiful summer morning. The sunlight shines warmly on the duck nest. One by one, all the duck's eggs break and open. Except one, the biggest egg...The last baby duck jumps out, and surprises the ducklings. He is grey and ugly. The ducks shout with confusion.	
2-1	The ugly duckling finds out he is alone when playing. The ugly duckling is trying to catch up with the duck group as they leave. Finally, the ugly duckling catches up with the group.	
2-2	The ducklings find out they are alone when playing. The ducklings are trying to catch up with the mother duck and the ugly duckling. Eventually, the ducklings catch up with the mother duck and the ugly duckling.	
2-3	The mother duck finds out she is alone when playing. The mother duck is trying to catch up with the ducklings' group. Finally, the mother duck catches up with the ducklings' group.	

3-1	Ducklings tease the ugly duckling. The mother duck finds out. The mother duck drives the ugly duckling away. The sad ugly duckling leaves.	
3-2	The ugly duckling bullies ducklings. The mother duck finds out. The mother duck drives the ugly duckling away. The sad ugly duckling leaves.	
4-1	The ugly duckling walks alone in the snowy weather. Warming families in the barn? catch the ugly duckling's eye. The ugly duckling walks away miserably.	
4-2	The ugly duckling walks alone on the snowing weather. Warming families in the barn catch the ugly duckling's eye. The ugly duckling harasses the family. The ugly duckling leaves miserably after disturbing them.	
5	Swimming swans find the ugly duckling hiding in the woods, and call the ugly duckling out. Swans ask the ugly duckling looking at water of the lake. The ugly duckling finds out he is a beautiful swan. Eventually, the swans fly together to the sky happily.	

The project was obtained praises and curiosities, such as how to do it and want to know how many varied plots in this film from the picked audiences who see at least twice of the film.

V. FUTURE DEVELOPMENT

The next steps of the research are going to conceive software which has easy operated interface for producing quantity films, to develop the theory of the storytelling for understanding the structure of the multiple plots' film, to create different type of films for determining the aptness, to establish audiences' behavior model for understanding audiences reaction, and to study different type of film for categorizing the filmmaking application.

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