

Conclusion

These studies are the second installment of a series which I hope to continue. Baseball is unique among sports in the way that statistics play such a central role in the game and the fans' enjoyment thereof. The importance of baseball statistics is evidenced by the existence of the Society for American Baseball Research, a scholarly society dedicated to studying baseball.

References and Acknowledgements

This work is made much easier by Lee Sinins' Complete Baseball Encyclopedia, a wonderful software package, and www.baseball-reference.com. It would have been impossible without the wonderful web sites www.retrosheet.org and www.sabr.org which give daily results and information for most major league games since the beginning of major league baseball.

Biography

Fred Worth received his B.S. in Mathematics from Evangel College in Springfield, Missouri in 1982. He received his M.S. in Applied Mathematics in 1987 and his Ph.D. in Mathematics in 1991 from the University of Missouri-Rolla where his son is currently attending school. He has been teaching at Henderson State University since August 1991. He is a member of the Society for American Baseball Research, the Mathematical Association of America and the Association of Christians in the Mathematical Sciences. He hates the Yankees.

The Emergence of Digital Documentary Filmmaking in the United States

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Abstract

This essay discusses documentary filmmaking in the United States and Great Britain throughout the 20th century and into the 21st century. Technological advancements have consistently improved filmmaking techniques, but they have also degraded the craft as the saturation of filmmakers influence quality control and the preservation of “cinema verite” or “truth in film.” This essay’s intention is not to decide which documentaries are truthful and good (there are too many to research) but rather discuss certain documentarians and the techniques they used in their storytelling methods. From Flaherty’s travel films such as “Nanook of the North” to Grierson’s quest for social improvements, many filmmakers have taken it upon themselves to attempt producing truth on film.

All films take capital to produce and the exploration of who was behind these filmmakers is necessary. Sponsorships from private investors to governmental agencies are

discussed in hopes that a film's success and failure can be attributed to not only the filmmaker, but to financiers and distributors as well.

Books discussing the history of documentary film development sometimes use words such as “explorer” or “journalist” to describe those who created the films. Film producer and teacher Erik Barnouw refers to some early twentieth-century documentarists as “artists” and those who “experimented with the moving image” (Barnouw 81). The accounts found within documentary history show that someone with the right equipment, willing participants and a story to tell, whether he or she is an explorer, journalist or artist, may become a documentarian. However, few documentarists are trailblazers when it comes to production, distribution and exhibition. This raises questions for professional and novice documentary filmmakers. First, what modes of production, distribution and exhibition have documentarists adopted from narrative and avant-garde filmmaking to achieve their goals? Secondly, is the emergence of digital filmmaking in documentaries another adoption that helps decide just who can create documentaries? In answering these questions a historical timeline of the early development of English-speaking documentary filmmaking in the United States and Great Britain will be illustrated. This will be followed with a focus toward technological advancements and more importantly the availability of production equipment and viewing mediums to the early and contemporary documentarians. Explorations of how documentaries from the United States are made, who makes them, who sees them and why will be explored in an attempt to see how the emergence of digital documentary filmmaking may raise interesting issues for audiences and filmmakers.

Establishment: The United States Production in the Beginning

Because American filmmaker Robert Flaherty's *Nanook of the North* (1922) premiered ten years before British filmmaker John Grierson's *Drifters* (1929) it should be assumed that the American documentary had some influence on British documentary. Flaherty entered documentary filmmaking not long after the Lumiere Brothers premiered their cinematographe in 1895. On his third expedition in 1913 to the northern Hudson Bay region, sponsored by developer Sir William Mackenzie, in search of iron ore, Flaherty took along a Bell and Howell 35 mm camera. The lower cost availability and advances toward capturing a steady image made this equipment a reasonable decision. Flaherty captured over 70,000 feet of film recording the Inuit Eskimo inhabitants. Flaherty shot, developed, and edited the film which loosely reflects the Hollywood “cameraman” of 1896-1907 (Bordwell, Staiger and Thompson 116). However, the differences outnumber the similarities when considering such things as Flaherty's lack of Hollywood necessities such as a crew, actors, a controlled studio, equipment options, standardized training and scripts.

While editing the film in Toronto, Flaherty dropped a cigarette and set fire to the twelve hours of film that was composed of cellulose nitrate. Many Hollywood studios would have abandoned the project, but Flaherty persisted. Hollywood's efficiency production mode where “efficiency engineers” were creating studios with a “view to speed, economy and concentration in every possible phase of efficient motion –picture production” may have had no choice but to abandon *Nanook of the North* (Bordwell, Staiger and Thompson 124).

An edited work print did manage to survive and Flaherty was able to show it. It generated excitement among some ethnographers and archaeologists. One spectator wrote, "This will introduce Mr. Robert J. Flaherty of Toronto, who was a most interesting series of ethnological moving pictures of Eskimo life" (Baurnow 35). British documentarian John Grierson saw it and referred to it as a "travelogue" with no "relation" or "thread" (Ellis and McLane 12). Flaherty agreed with the less pleasant evaluation of his form. He decided to return to the north with a new vision of bringing the characters to the screen and allowing audiences to experience the Eskimo way of life. After three years he secured money from Revillon Freres, a French fur company, to return to Hudson Bay where he shot from 1920-1922. This time Flaherty used diary notes as a daily script. He also became more involved as a director and had the Eskimos act in certain ways. For example, he directed *Nanook* and two others to capture a two-ton seal using a harpoon rather than the shotgun sitting nearby.

In some cases, Flaherty's style and form seem more similar to Hollywood techniques than to experimental ones. By observing such techniques as his use of close-ups for emotional impact or panning long shots so that viewers can experience the landscape, one may gather that Flaherty had a photographic background or a natural ability for the use of film space. He also employed the strict "use of tripods, direction of reenactments, multiple takes, continuity editing, matching action and sight lines and consistent screen direction" (Ellis and McLane 21). Flaherty was learning on the job but also creating a film style through production modes that had roots in narrative filmmaking. The fact that Flaherty had more flexibility in determining the finished product and how it could be filmed reflects the production modes that documentary films, and experimental ones, use today.

Though he proclaimed ignorance of technology, he made good use of it. Flaherty eventually filmed with the Akeley, a gyroscopic camera used by newsreel cameramen because of its ability to pan without a crank. He experimented with different techniques of filming and was incorporating dialogue by 1934 in his first sound film *Man of Aran*. In *Louisiana Story* (1948), he used the 35 mm Arriflex popularized during World War II. Hollywood's standardization of technology generated improvements in picture quality and mobility. The growing availability and improvements of the camera became equally as important to documentary production as they did for Hollywood production. According to Janet Staiger, "we shall find that technological changes increased production economies, differentiated products for competitive market positions, and "improved" the product. On the other hand, "technological change had to be accommodated within both production and film practices" (Bordwell, Staiger and Thompson 89).

Sponsorship: Pathe Exchange and Hollywood

Flaherty had been unsuccessful in convincing New York distributors to show what some called a "movie without a story, without stars" (Ellis and McLane 13). However, Pathe Exchange, another French firm, agreed to distribute *Nanook* once finished. It was the audience and critical success Flaherty found with *Nanook* that prompted Jesse L. Lasky of Famous-

Players Lasky (later Paramount) to take a chance on the non-fiction form. He agreed to distribute Flaherty's next film, *Moana: A Story of the South Seas* (1926).

For *Moana* the company provided Eastman Kodak's new panchromatic film, which was more sensitive to all colors of the spectrum than the standard orthochromatic film. In addition he was allowed to use long telephotos lenses of up to six inches focal length as opposed to the Hollywood standard two inches. This non-conformity to standard practices created several advantages. For instance, his subjects could be photographed from long distances, capturing them "as they were." Subjects became less self-conscious without the intrusion of a nearby camera. Flaherty commented on the artistic nature of these techniques saying, "The figures had a roundness, a stereoscopic quality that gave to the picture a startling reality and beauty" (Ellis and McLane 22).

Expansion

Between 1913 and 1926, Flaherty established documentary filmmaking in the United States and gained the attention of Hollywood. In 1930, the Worker's Film and Photo League was created to document a "true picture" of life in the United States (Ellis and McLane 77). The goal was to train filmmakers and produce media from a Marxist point of view. Ideological differences between those who preferred newsreel type propaganda and those who wanted aesthetic value deteriorated the movement. They dropped "worker's" from their title and became simply the Film and Photo League. The League, who employed such names as Burgess Meredith and James Cagney, produced topical films like *Winter* (1931) and *Bonus March* (1932).

The political right also developed its agenda on film. The *March of Time* series, produced by Time-Life-Fortune Inc., combined elements of the Flaherty aesthetics and the Grierson reform films. These were highly controversial to some. *MOT* coverage of the Depression breadlines and terror abroad such as *Unemployment* (1937) and *Inside Nazi Germany* (1938), was different from the Hollywood features that "ignored or dealt only covertly with the Depression." Such films were also shown when a majority of the American public was "strongly isolationist" (Ellis and McLane 78).

Documentary work also came out of the "brain trust" that Franklin D. Roosevelt built around his New Deal policies (Ellis and McLane 80). Film Critic Pare Lorentz was hired to produce a "new kind of dramatic/informational/persuasive" movie. Lorentz was unimpressed with the "school-teachings" of John Grierson and vowed to produce aesthetically pleasing "films of merit" such as *The Plow that Broke the Plains* (1936), which dealt with the relocation of farmers in the Dust Bowl and *The River* (1937), which promoted the Tennessee Valley Authority's job of making depressed regions viable. Both films are noted for their "emotional power and beauty" but also suffered from lack of direction at times. On *The Plow*, it is written that Lorentz "had no precise script" and "annoyed his cameramen" to the point of "an ultimatum" (Baurnow 118). This was different than the standardized training crews possessed by the 1930s within Hollywood's producer-unit system. This system had no use for a producer who worked without a script.

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Now that the government was funding films for its domestic efforts, and later the war effort, it was also recruiting help from other media. Director Frank Capra from Hollywood and cinematographer Paul Strand from the Film and Photo League brought their training and ideas of scripting, shooting and editing to the documentaries. This influence brought efficiency and improved aesthetics to the non-fiction form.

Exhibition and Distribution

Once Flaherty's *Nanook* proved to be a hit with audiences and critics, major Hollywood studios took documentaries more seriously. Exploration documentaries were hit and miss with audiences such as Flaherty's *Moana*, which failed at the box office while the migration documentaries *Grass* (1925) and *Chang* (1927), all distributed by Paramount, were successful. The March of Time series, though criticized by some as controversial and liberal, was distributed internationally. It was seen in the United States "by over twenty million people a month in 9,000 theatres" at the height of its popularity in the late 1930's and World War II (Ellis and McLane 78). This was major distribution that neither Flaherty nor previous documentary filmmakers had experienced. Such unprecedented distribution and the curiosity of bipartisan movie audiences kept theatres full. The "films of merit" by Lorentz did not enjoy such luck with the bipartisan audiences. Even though *The River* and *The Plow that Broke the Plains* have significant importance in the establishment of the United States Film Service in 1938, the films were poorly distributed. By as early as 1939 President Roosevelt lost his enthusiasm for the film medium as a government tool.

Experimental Modes

It is difficult to notice much influence from avant-garde production in early United States documentary. Early documentary practices by Flaherty may have reflected avant-garde modes such as the lack of corporate hierarchies, division of labor, financing and wide appeal. Aesthetic comparisons are harder to assume. One possible explanation is the limited availability of prewar avant-garde cinema in the United States. In addition, American audiences and filmmakers did not travel to European cine-clubs where the movement was stronger. Most filmmakers under government sponsorship were solicited from such circles as the political left, still photography, and fiction features but the final product was not as "personal" or as "artisanal" as Avant-garde films. (Hill and Gibson 11). For example, a crew with varied backgrounds was hired for *The River* because Pare Lorentz didn't know "what kind of footage" he wanted (Ellis and McLane 84). He also used a lyric commentary in the film that represented a free verse of asynchronous dialogue. The use of scores integrated with the visuals only gives prewar documentaries experimental tendencies.

Establishment: Great Britain Production in the Beginning

British filmmaker John Grierson, Scottish by birth, first applied the term "documentary" to the naturalist film *Moana* in his New York Sun review.

"Of course *Moana*, being a visual account of events in the daily life of a Polynesian youth and his family, has documentary value." (Ellis and McLane 3).

The film was directed by his American friend and "verbal sparring partner" Robert Flaherty (Ellis and McLane ix). Grierson may have been reacting in praise or criticism toward what he called the "aestheticky" of some documentary films (Baurnow 90). As Grierson stated, "I look on cinema as a pulpit, and use it as a propagandist." He was proudly announcing the goals of immediate social awareness that drove his films (Baurnow 85).

It was his conviction of a socially successful and modernized nation that enabled Grierson to raise money from government and private enterprises for film production. He found inspiration from two non-Hollywood films, Sergei Eisenstein's *Battleship Potemkin* (1925) and Flaherty's *Moana*. What Grierson saw through the power of these films was mass communication and social engineering abilities with artistic flair. He felt "that film had acquired...leverage over ideas once exercised by church and school" (Baurnow 85). Since the term "documentary" was still fairly new, it was advantageous for Grierson to consider different forms of filmmaking as influences. He did not restrict himself to the classic Hollywood narrative assembly-line production modes of the 1920s; such modes used central-producer systems, divisions and subdivisions of labor, studio locations, the "American style of acting" and shooting for continuity. (Bordwell, Staiger and Thompson 142). Though Grierson was aware of these modes he did not use them when he shot, directed, wrote, produced and edited his first 35 mm silent film, *Drifters*, in 1929.

Grierson saw cinema as a way to "enlighten and shape the modern complex, industrialized society" and produced hundreds of films dedicated to certain causes. (Ellis and McLane 73). Among them, *Housing Problems* (1935) was the first to allow the subjects to speak directly to the camera. This "direct testimony" technique is still used extensively in television documentaries and news programs. (Baurnow 95).

Sponsorship: E.M.B. and Expansion

The Empire Marketing Board, a promoter of British Empire products and researcher of member states, asked Grierson to survey government films abroad. It was the aim of the EMB to explore non-Hollywood modes of distribution and exhibition for its public relations campaign. United States competition and commercial practices, such as vertical integration, had nearly ceased British film production, exhibition and distribution in the 1920s. As seen in many documentary productions, the causes of Grierson's diversion from Hollywood's production methods were budgetary restrictions and institutional pressures. The Lumiere Brothers had publicly sold their cinematographe in England by 1897 and by the time Grierson entered filmmaking in 1927 the 35 mm camera and tripod were easily accessible. His meager budget of £2500 (\$5004.95 in 2008 US dollars) was more than likely heavily proportioned on the cost of the 35 mm film.

Following the success of *Drifters*, the EMB was eager to support Grierson's film ideas involving the "teamwork of man and machine" (Baurnow 88). Grierson became the main organizer for the newly created EMB Film Unit where he located funds for films and trained

filmmakers. For *Industrial Britain* Grierson hired Robert Flaherty, Arthur Elton (*Aero-Engine* 1933) and Basil Wright (*Song of Ceylon* 1934) as directors. He also hired Elton and Wright, who had done one avant-garde experiment, as cinematographers. In addition, Grierson brought Paul Rotha, a film scholar and author of *The Film Till Now* (1930), and other Film Society members into the EMB Film Unit. These men worked with the Grierson-trained filmmakers as Grierson assumed the role of “chief” similar to the central producer in the Hollywood system throughout the 1920’s that “provided a single controlling manager over the production of a firm’s films.” (Bordwell, Staiger and Thompson 320).

Neither his position nor his enthusiasm for industrial growth made Grierson a spokesperson for big business or government. Most of the personnel he trained to work on his films carried the same socialist banner as Grierson. Raising funds, finding and training personnel with similar doctrines, and protecting the documentary film from bureaucratic interference demanded the perseverance and leadership Grierson possessed, which resulted in the production of more than 300 British documentaries between 1929 and 1939. John Grierson was sent to Canada in 1938 by the British Film Committee of the Imperial Relations to survey more government films. By 1939 Canadian Parliament established a National Film Board based on Grierson’s suggestions and also named him the board’s first commissioner.

Experimental Modes

The city symphony film, *Berlin: Symphony of a City* (1927), gives the viewer a self-conscious experience of “exhilaration and speed” by watching fast-moving shots, accompanied by music, of a train entering and leaving the city of Berlin. Because it is composed of shots that show the machination of the city, it has a potential for “physical and emotional dislocation” (Hill and Gibson 13). With the same 35 mm cameras that were used high above cities or inside of trains, Grierson, a fan of the avant-garde, found it was possible to get the real footage he needed to “bring the Empire alive.” (Ellis and McLane 61). However, in the prewar era, not many major producers or distributors in Great Britain or the United States were interested with films that contrasted with the Hollywood mode of film practice. Typically, they opted for the safer “escapism” rather than the “self-conscious” experience.

Exhibition and Distribution

Grierson found that cine-clubs provided more audiences that shared his philosophies. The cine-club movement had begun in England by 1925 and was known for programs of an “art for art’s sake” orientation (Baurnow 87). It was in this movement where Grierson experienced such avant-garde and experimental films such as *Mannahatta* (1921) and *Berlin: Symphony of a City*.

It may have been the rhythmic patterns of the city symphonies or the aggressive styles of the cine-club films that attracted Grierson. He also found crews to train, critics to recruit and audiences to watch his films. *Drifters* premiered alongside *The Battleship Potemkin* on November 10, 1929. *Potemkin* had been censored by British authorities and forbidden to theatres. However, the private London Film Society, part of the British cine-club movement,

exhibited the film thus providing a launching pad for other issue-oriented films including those of Grierson and the British documentary movement.

WWII in the United States

The Oscar-winning *Why We Fight* series, directed by Hollywood's own Frank Capra, innovatively arranged battle and Nazi footage the War Department had closely guarded. The seven films produced and released publicly between 1943 and 1945 were called "orientation" films by the U.S. Armed Forces, which theoretically differentiated them from the more "poetic" social indoctrination films of Great Britain that were less concerned with the destructiveness of war. This rhetoric also tried to distinguish them from German propaganda, though similarities may be present in *Why We Fight's* multi-form. Though intended for viewing by military personnel, the US War Department was so impressed by Capra's powerful "structure" from "unstructured history" that they made the films available for civilian audiences in theatres. (Ellis and McLane 133). Banking on the success of the *MOT* series and the "records of battle" produced by such Hollywood veterans as John Ford (*The Battle of Midway* 1942) and John Huston (*Report from the Aleutians* 1943), distributors and exhibitors were welcoming the aesthetically pleasing, in part due to Hollywood trained personnel, wartime documentaries. They were also leaving behind the travelogues, explorer and social documentaries that preceded them.

Gathering footage for production on WWII documentaries was assisted by the utilization of the 16 mm camera. Introduced in 1923 but halted in Hollywood because of technological standardization issues, the camera was well suited to go into the battlefield to capture actuality up-close in battle situations. The addition of roadworthy Kodachrome film in 1935 assisted in the shipping of footage from the frontline to the studios at a rapid pace. In production, many government-paid soldiers gathered, shipped, and assembled the vast amounts of footage daily, creating an almost Hollywood-type assembly line mode of production. The directors maintained some modes of documentary production, such as location shooting, non-actors, and narration, but were also free to experiment with the existing footage, animation and reenactments. The manipulation of such images and sounds produced a final product bordering between what Grierson called the "creative treatment of actuality" and propaganda (Barnow 90).

Private sponsorship for documentaries in the United States "virtually ceased" during WWII. (Ellis and McLane 142). This diminished the influence of the avant-garde on documentaries during the war. With government attention on the war, many people wanting to make alternative films found themselves with no funding, no venues and little public interest. However, the widespread abundance of the 16 mm cameras leftover from the war and the creativity that followed gave life back to the genre.

Postwar documentaries

Over the course of fifty years, the documentary establishment in the United States had experienced experimentation, innovation, standardization, criticism, government sponsorship,

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and international distribution. It also felt hardships from no funding and small audiences. Before introducing video and digital technology into the discussion, it is beneficial to understand the categorization of the documentary according to John Hill and Pamela Church Gibson. The vast amount of documentaries made with newer technologies after World War II demanded newer labels and forms. The categories defined as modes are as follows:

- *Expository mode*-addresses audiences directly, usually through a narrator who interprets what we see, in effect telling us what we should think of the visuals.
- *Observational mode or Direct Cinema*- extended footage going about the routine business of their lives. This mode is greatly assisted by lightweight cameras, large magazines and synchronous sound recording.
- *Interactive mode*- characterized by the film crew interacting with people in front of the lens. This mode is sometimes confused with direct cinema because of long takes and is also dependent on newer, lightweight equipment.
- *Reflexive mode*- makes not only the film's subjects, but also its own formal qualities, the object of questioning and doubt (Hill and Gibson 45-46).

Most prewar and postwar documentaries in the United States fall into these categories. Many remained independent from Hollywood in production, distribution and exhibition. "In the 1950's and...1960's documentaries were almost entirely absent from the screen." (Ellis and McLane 315). Once the government lost interest in documentary production after the war, many civilians and soldiers returning home made films using 16 mm cameras but had trouble finding any interested distributors. Films without adequate sponsorship found themselves in schools, clubs, town halls and other small forms of exhibition.

For documentarists, the newer technology beginning in the 1950s saw the replacement of the 35 mm with the 16 mm, a decline in the use of tripods, and the capturing of synchronized sound on location. The number of documentarists, including news journalists, continued to grow throughout the 1950s, 60s and 70s, but theatre distributors and exhibitors remained uninterested aside from short instances of public enthusiasm for observational films like *Salesman* (1969) and *Woodstock* (1970) or expository films like *Malcolm X* (1971), and *Hearts and Minds* (1974).

Television as Exhibition

In 1946, following the wartime freeze on television technology, documentaries were first in line to find a new home in television's lineup. Television networks, mainly CBS and NBC and eventually ABC, were also interested in programming to fill their schedules and draw audiences to please their corporate sponsors. In production modes, the need for shorter narratives to fit specific airtimes also altered the documentary form. By 1952, NBC and ABC had documentary units to produce in-house programming. Newer production equipment could also be purchased or rented at lower costs than before.

Documentarists were finding new ways to mix modes and promote their agendas. The CBS series “*See it Now*” utilized footage from current events and interviews along with an on-air host. NBC responded with *Project XX* that resembled *Why We Fight* with its use of existing footage, still visuals and recreation of history. In 1953, the government became a sponsor for noncommercial documentary production. National Education Television (NET) established in 1953 produced documentary series, imported programs from Great Britain and bought independent productions. Budgets were smaller at NET, which is now known as PBS, but production quality standards were adequate enough to allow noncommercial programming to stand along commercial programming in the 1950’s saturation of television documentaries.

A fear of the “Fairness Doctrine” and its legality implications for media along with corporate sponsorship created a “better safe than sorry” mentality. Thus, production remained nearly all in-house for the networks. However, independent producer David Wolper created *The Race for Space* (1958) from existing Soviet space mission footage. Wolper’s previous job of movie salesman provided him contacts with network distributors. This paid off when he was able to sell his documentary to independent and network affiliate stations. The program ran for a week in 1960 on various stations. Considering the number of stations emerging after 1951 due to the rapid expansion provided by microwave and coaxial, it may be said that Wolper had somewhat pioneered “syndication” for documentaries made outside of network studios. Like Flaherty’s *Nanook* in theatres, the critical success of *The Race for Space*, nominated for an Academy Award, proved the importance of allowing independent documentaries into the corporate kingdom. Alongside documentaries hosted by television stars Edward R. Murrow and Walter Cronkite, Wolper’s programs were just as newsworthy, aesthetically pleasing, and peaked curiosity in audiences. His organization produced fifty-eight programs and twenty series between 1960 and 2000.

The new electronic means of distribution and exhibition utilizing cable and over-the-air network television, while adapting older, standardized production techniques, leads into the digital era where distribution and exhibition saturation over mediums such as the Internet and DVDs take precedent over production values.

Video

The first “porta-pak” utilized in 1968 for commercial broadcast was used to capture a presidential campaign. This half-inch open reel also became available to consumers the same year (Ellis and McLane 258). In 1973 a time-based corrector made the half-inch tapes standard for broadcast. Throughout the next two decades, technology refinements continued as companies such as Sony, Ikegami, JVC and Philips raced for innovative supremacy. For documentarists, networks and consumers this meant lower costs than film, shorter processing times and more exhibition possibilities. “By the end of the twentieth century video had almost completely replaced film for most type of documentary filmmaking” (Ellis and McLane 258). The lower costs also meant more footage could be captured. It was now possible to capture thousands of hours of “previously unavailable” moments of current events to the “boring sort” of “naval-gazing” of some personal documentaries (Ellis and McLane 259). Directors were free

to let cameras run as long as they wanted. This increase in footage did not impress the film advocates and they were not won over by the lower costs and mobility of the new medium.

Changes were also felt in distribution and exhibition due to video. Sale and rentals of 16 mm film for non-theatrical purposes (e.g. schools, libraries, film clubs, etc.) throughout the 1970s and 1980s generated enough money to support a group of distribution companies. The distributors then returned the money to fund production for documentary filmmakers. The low cost of video rentals shattered the profit margins of this practice. Video documentaries were easier and cheaper to make and stood a better chance being seen on television than in theatres.

Generating money from them or convincing sponsors that they would eventually make money was just as difficult for independent documentaries as it had ever been. Also, the flexibility in video formats was not advantageous to the non-theatrical exhibitor. The continuous introduction of new video formats kept filmmakers, producers and broadcasters confused on which one was best for picture quality, archival capabilities and cost.

Television, especially cable and satellite broadcasts, did not let the aesthetic or format debate stunt their growth. Satellite stations like CNN and TBS expanded their programming in the 1980's with video documentaries concerning news and exploration such as the Jaques Cousteau undersea series begun by David Wolper. Cable stations like A&E, The History Channel and The Learning Channel followed this trend. Non-commercial stations like PBS also found economic relief with video documentaries produced in-house and from purchasing. For documentarians, distributors, and broadcasters, better technology meant more choices. For audiences, this meant more cultural experiences from documentaries produced by minorities or political ideas from historical films. Whichever way it is argued, video did not improve aesthetic quality but did increase saturation through television.

Digital and Documentary: Production

Sony introduced commercial-use digital video as early as 1986. It also adapted its Beta format, popular with television journalists, for digital. For those who saw the introduction of video as a “decline in the overall quality of...documentary” though “the number of television hours [for documentary] increased exponentially” digital has provided little relief. Some have argued that “anyone with a digital camera and a home computer could put together a documentary, and fortunately many more people can tell their stories” but “the professionalism of documentary craft and artistry, to say nothing of concern for ethical considerations, has suffered.”

Digital provides the opportunity for documentaries to take on any or several of the modes defined by Hill and Gibson. For example, there is the expository and observational nature of the “slideshow approach” with key-framed stills, narration and talking heads that is a constant staple of historical television documentary. Many network and cable documentaries have adapted the High Definition format for improved quality and a multi-platform conversion mode. With digital, the film can be made quickly and efficiently. It's aesthetic quality and categorization can be argued later.

Distribution and Exhibition

The era of digital production has failed to bring audiences flocking to theatrical documentaries. Noticeable films like *Fahrenheit 9/11* (2004) grossed 21.8 million dollars at theatres but ten million was also spent on release advertising. This was after it won the Palme d'Or at the 2004 Cannes Film Festival. This film also benefited from bipartisan audiences like the MOT series had done in the 1930's. Documentaries finding their way to theatres have to gain critical success first before a distributor picks it up. This is similar to the way Flaherty's films were treated in the 1930's.

Due to digital production and conversion, documentaries have saturated the web. Websites like quicksilverscreen.com offer full length downloads of documentaries for one-time viewing. PBS offers its *Frontline* series in an online format. Documentaries reserved for online use, which resemble the slideshow narratives with strict use of stills, exist on places like digitaldocumentary.org. Stock footage and currents events can be found on efootage.com and broadcast news sites. Features and raw footage can be accessed at dvids.net, which is provided by the military. Documentaries of social merit, or propaganda, can be found at whywepotes.net and are also distributed on the ubiquitous youtube.com. Online viewing can generate interactivity through message boards and feedback from other filmmakers or audience members.

Even though digital has led to more documentary categories and forms, it raises questions about their truthfulness. According to Ellis and McLane, "Cost conscious and inexperienced researchers sometimes substituted any available footage for actual shots of the events under discussion" (Ellis and McLane 295). In turn the "viewer may accept without question the message of the work, negotiate a reading by accepting some elements and not others, or reject or ignore the work completely" (Hartwig 3). Audiences have always had the opportunity to make these kinds of choices but the fast growth of digital documentaries has also left them with too many to watch.

For filmmakers, digital has led to more choices in format and distribution. Not all filmmakers have made changes. Ken Burns used 16 mm film for his epic, *The Civil War* (1990), and still uses it today. Barbara Kopple's *My Generation* (2000) combined the two modes and explained that, "[She] took a deep breath and went and did [Woodstock] '99 with a really small crew-one 16 mm and two DV cameras" (Ellis and McLane 288). These filmmakers may be concerned with exhibition, but they are not as concerned with formats due to digital's conversion capabilities. For example, *Hoop Dreams* (1994) was converted to 35 mm from Beta and remixed in Dolby Stereo and Surround sound for theatres. Like thousands of other documentaries, it is offered on DVD through such companies as Netflix that has turned the home, along with online viewing, into an exhibitor of documentaries. Alternatively, filmmaker Les Blank has his own distribution company, Flower Films, that finances his films along with selling tapes "out of the trunk of his car"- a true independent (Ellis and McLane 310).

Documentary filmmaking has enjoyed the benefits of production modes from both Hollywood and experimental cinema. It has operated like an open system, meaning it

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continually interacts with its environment. The progress of new film and video production technologies has changed forms and modes in documentaries but not destroyed them. The technology has also made documentary production easier to learn and conversion of formats has allowed for different types of exhibition. However, it is still more important to find compelling subjects, create a well-structured script and make the right choices in editing.

Digital technology makes distribution and exhibition easier for network and independent documentaries with quick transporting, archiving and delivery of the programs to the home. It is now possible for anyone to create a documentary that falls into one of the four documentary categories and mass disseminate it. However, this does not mean those sitting in front of the computer or television is as obliged to watch a film as the person in the theatre. The impact of digital technology has affected the production, distribution and exhibition for documentaries and has increased the amount of choices with which a filmmaker is faced. By looking at the history of documentaries, it is easy to see that adoption of technologies has never been difficult for the filmmakers. What remains challenging is telling a good story, locating funds and getting audiences to pay attention.

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Biographical Sketch

Paul Glover received a B.A. in Communication and Information Sciences from the University of Alabama in 2001. From 2002-2004 he completed an M.A. in Communication

Systems Management. Currently, he teaches Radio and Television production courses at Henderson State University and completed an M.F.A. in Digital Filmmaking from the University of Central Arkansas in 2011. He has produced several documentaries for the Hot Springs Documentary Film Festival and directed a short narrative, "On My Trail", about blues musician Robert Johnson.

MyMathLab Effectiveness in College Algebra

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Abstract

A study from the fall of 2012 at Henderson State University provided evidence that students using MyMathLab in College Algebra did slightly better, on average, than those who did not. Also, the conversion of all the sections to MyMathLab for subsequent semesters will be discussed.

Introduction

Approximately 55% of Henderson State University (HSU) students who enroll in College Algebra finish with a grade of A, B, or C [1], which is within the range of success rates nationwide, typically 40-60%. [2] The HSU mathematics and computer science department adheres to state and national standards for College Algebra. This course is challenging because we adhere to the Arkansas Higher Education Coordinating Board policies, [4] which requires that the following topics must be covered in College Algebra:

1. Quadratic equations and inequalities with applications.
2. Polynomial rational, exponential, logarithmic functions, graphing functions, combining functions, inverse functions solving problems whose mathematical models are polynomial, exponential and logarithmic functions. Finding zeros of polynomial and rational functions including the use of methods of approximation.
3. Solving systems of linear equations, including solution by matrix methods and determinants. Systems of linear inequalities; applications of both systems of equations and systems of linear inequalities. Systems of non-linear equations. [4]

We teach row-reduction, in College Algebra, instead of determinants, because it allows the student to write the parametric form when a system has an infinite number of solutions and has other applications in subsequent courses. Some of the College Algebra instructors may not have time to cover linear inequalities, especially linear programming, and systems of nonlinear equations. The coordinating board recommends the following topics, however we decided to put them in the courses Discrete Mathematics I or Pre-Calculus Mathematics instead: