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The DNA of a Television News Story: Technological Influences on TV News Production

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Abstract

This study challenges whether the television (TV) news story has changed due to the advancement in technologies and adaption of production methods from a Fordist to a post-Fordist routine. Textual analysis of 40 years of producing the “news package” appears to reveal minimal changes to the length and framework; however, there seems to be significant changes to the “genetic” construction. While at first, the changes appear to be driven by technology, it may be reasonable to question whether or not technological advancement is responsible. This essay looks at the construction of a TV news story from a microlevel of production as well as examines possible causes for the progressive alterations.

Keywords

technology, determinism, Fordism, post-Fordism, news production

Introduction

Technological determinism is a strong and compelling force that may influence practitioners, scholars, and educators to make assumptions. Technology may be seen as a catalyst of change in the methods of storytelling and the final product of a news story.

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This study is meant to challenge the assumption that convergence of media and technology changes the structure of a television (TV) news story. This article is intended to add to the scholarly discussion of technological advancement and its impact on journalism. Practitioners will be interested to learn how decades of replacing equipment impacted their work. Educators may want to use this material to illustrate the skeletal body of a TV news story.

In terms of television news, the interaction between journalists and technology evolves, yet the conventions of storytelling may remain unchanged. The intent of this article is to examine if technology influences the storytelling of television news. While the act of journalism is an art form, the production of the television news story relies on a scientific approach resulting in a byproduct of a consistent structure. In other words, technological advancement may change the tools to create a story but the story structure may not change drastically. The structure of the TV news story, its patterns of sound and video, identifies the construction of the news story. In a practical perspective, the DNA or the schematic structures, of television news stories consist of building blocks of fragmented sound bites, video clips and audio narration. The textual analysis of this study examines whether the conventional patterns of storytelling changes simultaneously with the evolutionary applications of technology. The production of the television news story progressed through various changes in technology (Underwood, 2007), (Zettl, 2012), (Medoff et al. (2007). The impact of technology upon the news story may need to be clarified according to the time and place of the technology. Quinn (2004) maintains that television journalism changes due to technology and that the more technology advances, the more the product changes (Quinn, 2004: 113).

Ethnographic study reveals methods, cultures, and influences upon the production of news (Deacon, Pickering, Golding, & Murdock, 1999, pp. 256–258). Ethnography focuses on a single culture and group at a particular time making it limited in its examination of production. Textual analysis is important for broader inspection to see the output and end product of the observed groups and other unobserved groups. Comparative analysis of outputs can be conducted with textual analysis.

Textual analysis may establish whether the evolutionary changes in producing TV news affects the consistency of the final product directly. In this context, it is important to understand the interactions taking place that may be affecting the product. Therefore, ethnographic study and the qualitative interviews will demonstrate the process of creating the text under examination. Just as important, the study of the construction of the news package, as the “gene” of TV journalism is examined through the textual analysis.

Literature Review

The anthropological approach to the technology helps to find meaning in the production process (Cottle, 2007). Technologies are linked to the product, but so are the social implications (Lemmonier, 1993, pp. 6–9). In that regard, it seems technology is a process of selection of technical features for an invented artifact or one imported

from another social group. Social actions determine the uses of technology, the working routines, and the skills required to use it. Lemmonier (1993) called this technological choice. "All techniques are thus simultaneously embedded in and partly a result of non-technical considerations" (Lemmonier, 1993, pp. 6–9).

Determinism is a vague assumption applied to progressive states of change and not grounded by a specific or predictable nature. In this context, technological determinism may distract researchers from the main task of gathering information in a systematic construction model for the production of daily TV news. There may be assumptions linked to the progress of technological change. While some may say we need to understand the routines of news making as technologically embedded, but not indifferent to meaning (Hemmingway & van Loon, 2010, pp. 166–168), this is not necessarily the case. Research has led to a greater understanding of media organizations, content, and consumption (Klinenberg, 2005: 49) (Stromback & Kiouisis, 2010), there has been less work done on the process of gathering material and constructing the media for dissemination.

At the time of the ethnographic study, the traditional crew of reporter, photographer and editor was found at WKYC-TV. The introduction of the multimedia journalist (MMJ) to the newsroom occurred during the ethnographic study. The video editor has been eliminated, and presently, the model of reporter and photographer/editor is utilized at the station, as well as the MMJ. In the observed traditional crew, the TV news photographer acquires sound and pictures detailing the event or subject under scrutiny. The reporter interviews subjects to obtain their personal comments and information, which bridge the elements of the story (Underwood, 2007, pp. 101–111). The video editor puts the physical pieces together on a skeletal structure called a timeline, using a nonlinear method of sound and pictures as blocks (p. 267). Once constructed, the timeline is played, forming a linear story told in the traditional manner of a story with a beginning, middle, and end (pp. 21–36). Three individuals take on three different roles, each performing separate jobs and tasks. The concept of the division of labor can be termed "Fordist," as the development of manufacturing utilized the concept to increase efficiency (Nadesan, 2001, p. 260). Journalism provides unique products, the methods by which the story is constructed, especially by the crafts individuals sometimes becomes routine, as the requirements for the finished product are crafted and completed. The traditional crew is Fordist in its nature. Their individual roles are nonflexible. The photographer is not expected to write copy, conceptualize the story, or be responsible for the accuracy of the information. The video editor is separate from the field process until the very end of assemblage. It was revealed in the ethnographic study that the video editor of the traditional crew has a very short period of time to edit a news package and the final phase of construction reveals the crew to be Fordist in its nature. However, other TV news crews can be viewed as created in a post-Fordist model. In the post-Fordist model, TV production encourages individuals to construct in flexible ways (Bratich, 2006, pp. 66–67). Tasks may sometimes be interchanged between workers in an effort to construct and finish a product. TV news crews understand each member's tasks and each member supports the other in performing his/her job.

News construction is usually completed in a team environment with a division of labor. However, the rigidity of the work-defined rules of strict Fordism may not be applicable to some TV news crews. Instead of a strict work flow of defined tasks, the "team working" (Pruijt, 2003, p. 77) of a work crew creates lean production. As Pruijt (2003) explains, team working means intensification of work without the rigidity of the Tayloristic division of labor. Taylorism refers to the direct supervision of managers, dictating the specific tasks of the crew and denying any flexibility in the methods of production. The transferring from a traditional TV news crew to a single journalist, the "MMJ", requires flexibility in order to complete required tasks. Lean production calls for learning more professional skills and applying them creatively in a team setting rather than in a rigid form (Pruijt, 2003, p. 79). The MMJ requires more professional skills but removes the team production and become self-sufficient.

In true anti-Taylorism reform, TV crews are meant to be autonomous. Crews separately working on individual products construct news stories. Each crew, however, must satisfy story requirements to complete the product. Items such as a "stand-up" are referred to as "piece to cameras" in British newsrooms, interviews, and "b-roll" need to be produced. They are the widgets in the construction process (Boyd-Hinds, 1995, p. 141).

TV news might be entering a postindustrial phase of production. Taylorism can be described as an industrial method of creating a product. There is no integration of production and management. Managers make all the decisions. Technical discipline is adhered to in an assembly-line fashion (Pruijt, 2003, p. 84). TV production is anti-Taylorist, in that the supervisor is not with the team. However, supervision is carried out at several intervals during the production process, either with managers interjecting directives intermediately during production or after the field production phase is completed and the reporter's script is reviewed. Crews frequently request managerial perspectives as to the legal, ethical, and thematic complications while producing a news story. As far as the field production of the news story is concerned, the TV crews work alone in their group away from the management group. All team members can participate in some decision making, not only management. The method is utilized with the intention of creating autonomy and sharing the decision-making responsibilities (Pruijt, 2003, p. 84). In the field, the parts and design of the product are created in a tandem between the reporter and the videographer. The final product is constructed, whereas each member creates a part of the final product and it is passed along to the next worker. While there is collaboration, each member is physically responsible for a specific piece of the collective effort. The reporter is responsible for the script, the photographer is responsible for the imagery, and the editor is responsible for the creation of the final product.

It may be argued that TV news production is based on a neo-Tayloristic approach, with technical skills becoming more automated. Workers are fettered to management in organizationally reconstructed separate work units. The production process actually increases the fragmented tasks and the control of management (Lomba,

2005, p. 72). The control of management is shown by the story selection, suggestion of sources, and other elements that are dictated to the journalists because of time constraints. The neo-Fordist may claim that the quality of jobs for most workers has declined in the past 20 years, that job security has dropped while workloads have increased, and that workers are expected to work more without a commensurate rise in pay. Meanwhile the unions' influence has deteriorated, compounding the ability of the workers to maintain stability and longevity in the workforce (Handel, 2005, p. 68). TV workers, at the Gannett Corporation owned WKYC-TV, would attest to these findings as the management continues to ignore the union contract with the National Association of Broadcast Engineers and Technicians (NABET). At the NABET-CWA 3rd Triennial Conference in 2011, NABET-CWA Sector President James C. Joyce stated, "In the past 3 years organized labor has faced unprecedented attacks on our jobs, on our benefits, and on the laws which have been in place for decades to protect our rights."¹ The situation at WKYC-TV may be symbolic of the unions' loss of power, with conglomerations able to fight against contractual obligations. Others, like Peci (2009), view the plentiful numbers of low-paid young workers as a new opportunity for the exploitation of Taylorism practices (Handel, 2005, p. 70; Peci, 2009, p. 291). The extended workforce is being further defined by the restructuring of the media industry since the 1980s, that is, technological innovations and the expanding labor supply (Christopherson, 2008, p. 75). Christopherson (2008) believes the higher education training of potential MMJs is allowing the workforce to expand. Training programs in New York and Los Angeles train students to produce on extremely low budgets and to work very rapidly within time constraints. They learn to work efficiently as a "hybrid" production worker who is flexible and independent (Christopherson, 2008, p. 83). Most of the students graduating from such schools have more in common with new media colleagues than the elders of broadcast TV (Batt, Christopherson, Rightor, & Van Jaarsveld, 2001).

The process in which the TV news story is constructed and delivered to the audience has been maintained (Boyd-Hinds, 1995, p. 61–85) in the form of the news package. A package is a combination of audio clips from interviews, video portions called b-roll, and a narration track. While all news stories are not packages, and all packages are not similar in their textual content, the elements and the structure of the stories are frequently similar. The product consists of sound clips from interviews mixed with audio track and video images.

Video editors take the script and the images and construct the "package." The "assembly-line" method of work may be argued to be the best model for news construction; however, productivity is much higher with leaner post-Fordist or neo-Tayloristic work groups (Pruijt, 1997, pp. 112–113). If the traditional TV news crew is creating products according to the Fordist or Tayloristic approaches, it may not be a more efficient approach than the MMJ. It is an argument many practitioners and researchers eagerly contradict (Aviles & Carvajal, 2008; Cottle & Ashton, 1999; Hemmingway, 2008; Underwood, 2007). There seems to be disbelief that traditional manufacturing can be less productive than post-Fordist production methods.

The TV news story is a collection of raw material (Borden & Harvey, 1998, p. 9) crafted into a product of a regimented structure. The product is a linear presentation utilizing audio and video, which has not structurally changed since the beginning of TV news, as demonstrated by the following analysis of TV news products.

Research Questions

With the blending of media and technology, journalism is no longer about one mode of media over another; there is interconnectivity between them (Huang & Helder, 2007, pp. 105–115). Each medium has to be learned and utilized by individual journalists. Without the social burden of journalism (Deuze, 2005, p. 444), is TV news an industry with a particular production method like any other capitalistic enterprise? Does technology affect the particular patterns and structures of the news story? The construction process of TV news involves multiple individuals with individualized tasks. Is the idea of lean production a step toward a post-Fordist state? Does the process of traditional news construction differ from other forms of production, which are attempting to become more efficient?

Methodology

An ethnographic study was conducted at WKYC-TV, in Cleveland, Ohio, beginning with a pilot study from 2006 through 2007, with further participant observation from 2007 to 2010. The study used a mixed-method approach (Creswell & Plano-Clark, 2006), combining quantitative and qualitative methods to evaluate changes to the production methods of local TV news gatherers (Deacon et al., 1999; Emerson, Fretz, & Shaw, 1995; Hansen, Cottle, Negrine, & Newbold, 1998). This research may appear as a case study of the production methods of one particular news organization, yet the intention of the research is to compare the traditional methods to newer forms of production. The descriptions provided are based on observations of one particular TV news organization.

Direct observation of news crews was conducted over the years of study, with 1 month of imbedded observation including 23 qualitative interviews with journalists, crafts individuals, and managers. Two types of news production was observed and contrasted. The traditional crew of reporter, photographer, and editor was compared to the converged journalist of one individual.

During the qualitative interviews of ethnographic subjects, it was revealed there was a basic assumption that technology changed the story structure. A textual analysis was conducted to address those assumptions. The textual analysis consisted of news stories from the 1970s to 2010 produced at the NBC affiliate in Cleveland, Ohio. The stories included work produced by both traditional TV news crews and MMJs. The texts of the individual stories were examined as a self-sustained, freestanding work of journalism. The story or “news package” was

analyzed individually and compared with other stories using variables of the characteristics of a TV news story. Those characteristics are length, elements (edits), and structure.

WKYC-TV's tape archive begins in 1975, when the news organization used videotape for archiving and editing. Film was transferred to tape and edited on videotape. The more recent decades of the 1990s and 2000s contained complete archives. It appeared as if all of the news packages from those decades were archived and were available. In the 1970s, there were fewer daily newscasts than in 2010. There may have been one or two newscasts a day depending on the day of the week. As more newscasts became a part of the daily production schedule, the more news packages were created. In 2010, there were five daily newscasts produced at WKYC-TV. The amount of news packages per day significantly increased with the additional newscasts. It is difficult to approximate the number of total news packages produced over the four decades. Based on the number of newscasts each day and the number of packages per newscast, 1,100 news packages were created each year from 1975 to 1989. From the 1990s to the present day, it may be possible to produce approximately 2,500 news packages each year. From those approximations, a total of 66,500 news packages may have been created during the 40-year span at WKYC-TV.

The archives contained the edit masters of the packages used for broadcast. The stories were not dubbed copies but original masters. To compare the differences of four decades of TV news stories of various technologies, random samples were taken from the archives of WKYC-TV. Four hundred news packages in total were analyzed. One hundred packages from each decade were collected, from the film days of the 1970s, through the three-quarter inch video days of the 1980s, to the beta video of the 1990s, to the digital video (DV) of the present decade. Each package was viewed and dissected by identified elements. The findings of this study reflect the results from the examination.

A news story consists of a number of variables:

1. Voice-over (vo): The voice-over is the narration of the script used to tell the story and for most news stories (Keller & Hawkins, 2002, p. 391).
2. Sound bite (sb): A sound bite is an audio clip from a subject who is interviewed on camera or someone who is speaking and happens to be recorded, for example, a politician giving a speech (Keller & Hawkins, 2002, p. 390).
3. Stand-up/piece to camera (su): The stand-up is used for a majority of news stories labeled, packages, whereas a package is a self-contained news story that does not require additional information or presence from another location although frequently is presented from a live shot or a studio location in order to support supplemental information. It was important to both the management and the reporter to be seen on camera for those reasons. In a practical sense, a reporter will often use the stand-up in the structure to go from one location to

	1970s	1980s	1990s	2000s	2010 MMJ
Type of technology:	Film to 35 ^{mm}	Betacam	M2	Beta SX/DV	DV/digital
Genre					
General news	69	72	72	68	18
Breaking news (spot news)	21	4	13	17	0
Features	10	14	8	12	7
In depth	0	10	7	3	0

another or one side of an argument to the other side. Sometimes stand-ups are not put on tape and are substituted with “live shots” or studio appearances (Keller & Hawkins, 2002, p. 390).

The genre may affect the length of the news package. The 1970s selections included the largest number of spot news stories, whereas the analysis of the WKYC-TV MMJ's of 2010 did not include any spot news stories. It is difficult to determine whether one person, similar to the MMJ, completed any of the packages before 2006 without observing the production of the story. There may have been instances when one individual may have produced the story. However, the station has rigidly divided roles of production due to union regulations, so it is highly unlikely that one individual constructed the packages. It was not until after 2006 when MMJs were implemented into the news organization. However, the archive for 2010 clearly indicates what packages were produced by the MMJs. While there may be several reasons for the discrepancies between the genres of stories produced by traditional crews and the MMJ, it may be unfair to speculate on the reason, but the random selection did not intentionally select more spot news stories than any other type of genre. For the 1970s news packages, 68% of the stories were general news, 21% were spot news, and 10% were features. There were no in-depth stories selected. It is unclear why an in-depth story was not randomly selected, other than it appears very few were archived during the years of 1975–1979. It is uncertain the low number of in-depth stories is a function of the film transfer or because of editorial decisions.

Findings

This ethnographic study and textual analysis of WKYC-TV's news stories seem to indicate technology does not change the format of news stories, nor does it indicate the process of producing the story is superficially affected by the technology itself. From examining the relationships of traditional and converged news crews, it appears that technology has no bearing on the meaning of a news story. Researchers who contend that the medium is the focus of examination, the content

of the message or the “phenomenology” and not the “apparatus” (Marriott, 2007, p. 4) would be correct. The apparatus can be the term for the media production and distribution collective. Yet in this study it is argued that the apparatus impacts the authenticity of the medium. The apparatus can be viewed as the camera, or other acquisition technologies, in cooperation with the editing and delivery platform. The interconnectedness of the entities, within the apparatus, impacts storytelling in terms of language, selectivity of information, and presentation (Underwood, 2007, pp. 133–143).

However, if those controlling the apparatus manipulate the meanings representing the phenomenology, it would seem the apparatus has some influence in the message. The apparatus dictates the message, just as nouns and verbs dictate meaning to a sentence, with exclusions and inclusions of information based on selected elements of a visual language. Exclusion of thoughts, facts, and events seem to be as evidentiary as live events are impactful for their “liveness” or “immediacy” (Marriott, 2007, p. 52). The apparatus is not exclusive of technology, it includes the gears of management intertwined with labor forces. This study found the structure of the news story is fulfilled whether the technology is new or old. It may also be argued that the changes in the technology do not impact the message. It is the mediations between humans and machines that have a greater impact (Berkowitz, 1997, pp. 107–122).

By examining news stories over a 40-year span, constructed utilizing different types of technology at different stages of the structures and cultures of local TV news, it can be concluded that the story structure of a TV news story 40 years ago is similar to the structure of TV news stories today. It can also be said that the news package produced by the MMJ, in 2010, has the same structure as the news package produced by the traditional news crew. Identifiable patterns required to label a news story a package are comparable between 1975 and 2010.

The uniformity of the news stories will help examine whether the look of local news is one form of dictating content (Rosenstiel et al., 2007, p. 47) and how the construction process has affected the content (Kolodzy, 2006, pp. 140–141). While the created products are similar, the production process is varied, based on the number of workers and the technology used to create the individual elements of each news package. Below is a table created from the findings from the sampled news packages: the sampling is only from packages and not from the smaller nonpackaged stories appearing in newscasts.

News packages, sampled from the 1970s, revealed 36 separate patterns in the 100 stories selected. The most popular structures of the 100 news stories from the 1970s were as follows:

- 13% used the vo-sb-vo pattern;
- 13% used the vo-sb-vo-sb-vo pattern;
- 10% used the vo-sb-vo-su pattern; and
- 9% used the vo-sb-su pattern.

	1970s	1980s	1990s	2000s	2010 MMJ
Type of technology	Film to 3,00	Betacam	M2	Beta SX/DV	DV/digital
Number of packages	100	100	100	100	25
Average total length (in seconds)	88.07	82.14	89.25	86.83	89.92
Number of edits per package	16.6	18	19.16	22	30.24
Average sound bite length (in seconds)	20.4	9.3	8.0	7.4	6.2
Number of sound bites	2	2.9	4.0	4.75	5.88
Average length of edit (in seconds)	7.27	4.79	4.65	3.82	2.97

Some of the patterns were relatively simple, utilizing only a voice-over, while others were complicated extensions of the vo-sb connection. The longest pattern identified connected four (vo-sb) connections with an ending "vo" to create the pattern vo-sb-vo-sb-vo-sb-vo-sb-vo.

From the 1980s, the analysis identified 55 separate patterns from the 100 stories selected. The most popular structures of the 100 new stories were:

- 10% used the vo-sb-vo-sb-vo;
- 9% used the vo-sb-vo; and
- 6% used the vo-sb-vo-sb-su.

It appears that sound bites are important to the structure of the news package regardless of the genre. Only 4% of the news packages did not have a sound bite included in the story.

The 1980s news package shows the conventions of the news package changing as the number of structural patterns increase. The increase in patterns may indicate the influence of editing on the structure as videotape recordings of Betamax are now edited directly to tape.

The most complex structure of the 100 stories involves a 15-segment strand vo-su-sb-vo-sb-vo-sb-vo-su-vo-sb-vo-sb-vo-su.

The story was a general news story from 1988. At this point in the history of WKYC-TV, the camcorder and videotape editing were fully implemented. Whether or not the increase in structure complexity reflects the change in technology is uncertain, but it is important to point out that the next decade of selected news stories reveals 57 patterns in their structure. It may be that the conventions of editing linear stories during these two decades created particular patterns of writing and reporting in collaboration with the technology. From the 1990s, the analysis identified 57 separate patterns in the 100 stories selected. The most popular structures of the 100 news stories were:

- 9% used the vo-sb-vo-sb-vo-sb-vo;
- 7% used the vo-sb-vo-sb-vo; and
- 5% used the vo-sb-vo-sb.

The decade seems to show that the structure of the news story is changing by adding more sound bites to the news package. The length remains relatively the same, but sound bites are used to create a longer pattern. The textual analysis reveals the number of interviewed individuals appearing in a particular story has not increased over the decades, but the number of sound bites extracted from the interviews has increased. Between two and three people can be identified as interviewed for the package. However, this does not mean more individuals were interviewed in the process of news gathering, only that two to three individuals are used in the package.

From the 2000s, the analysis identified 60 separate patterns in the 100 stories selected. The most popular structures of the 100 news stories were:

- 9% used the vo-sb-vo-sb-vo-sb-vo;
- 9% used the vo-sb-vo-sb-vo-sb-vo-sb; and
- 6% used the vo-sb-vo-sb-vo-sb-vo-sb-vo-sb-vo-sb-vo-sb.

In 2010 (MMJs), the analysis identified 16 separate patterns in the 25 stories selected. The most popular structures of the 25 stories were:

- 12% used the vo-sb-vo-sb-vo-sb-vo-sb-vo-sb-vo-sb-vo-sb;
- 8% used the vo-sb-vo-sb-vo-sb-vo-sb-vo-sb-vo-sb;
- 8% used the vo-sb-vo-sb-vo-sb-vo-sb; and
- 8% used the vo-sb-vo-sb-vo.

The number of separate patterns increased over the decades, indicating flexibility and uniqueness to each news story. 60% of the news stories, of this study of the 2000 decade at WKYC-TV, are unique in structure. Compared with the 1970s, when only 36% were unique structures. The length and percentages of voice-over and sound bites seem unchanged; however, the construction inside the length appears to be increasingly exclusive to the journalist.

	The length of each edit	The number of edits
1970s	7.42	11.94
1980s	4.79	17.15
1990s	4.66	19.16
2000s	3.82	22.71
2010 (MMJ)	2.97	30.24

The increase of edits may indicate that technology enables the ability of the journalist to make more edits. Because of the advancement in editing technology, there may be an increase in the patterns, as flexibility and speed increases. The shift from linear tape-to-tape editing to nonlinear digital editing in the 2000s is cited by those in

the ethnographic study as an influence on production practices. There may be other influences on the editing unseen by textual analysis, such as societal changes and the changes in audiences. Most likely, the reason cannot be deduced to be a solely technological catalyst for the changes.

Conclusion

News managers, like production managers, are looking for ways to increase efficiencies. This research may be helpful in expressing to MMJs how much material they need to create a news story. The findings graphically show to MMJs that 30 edits are an average number of shots required to edit a TV news story in 2010. The observed MMJ is attempting to complete a news story as quickly as possible. Many times, the MMJ videography can become burdensome as it takes physical steps and removes the MMJ from other tasks. Often the MMJ does not videotape enough material, or the material they shoot is not relevant to the structure of the story. Many of the observed MMJs interviewed say they may unintentionally shoot more interview material than b-roll, thus affecting the structure of their story. In some instances if they lengthen their sound bites and b-roll, they will be making fewer edits, thereby increasing efficiencies when they are under deadline. The numbers may help the cognition of MMJs in regard to their work requirements. Because they are under pressure to produce material quickly, it may help them to approach the news story as a constructed product when performing craftwork like videography or editing. A manager may be able to help the MMJ in the production by highlighting the findings to streamline production and the MMJ will be able to better define the amount of material needed to fulfill the requirements of the news package, thus minimizing unnecessary steps or time.

The findings may be equally helpful to educators attempting to teach students how to write and edit a news story, as it illustrates the patterns of a news story. It may help students to see beyond the linear presentation most viewers are accustomed to and see the news story as a construction. It may also lead to a debate about the quality of the information and style of presentation.

There are no "hard-and-fast" codes to identify a TV news story or a strict DNA for particular TV news stories. TV news stories do not have one pattern, nor do they all use the same number of elements, yet if the story is peeled away from the skeletal structure of the storytelling there appears to be consistent patterns. In the sense of linear size, or the running time, the empirical data suggests the structure of the TV news package remains consistent regardless of the technology. As a viewer, there may be an expected amount of time given to a particular story. As a journalist, there may be a delegated length given to the news package by management. The length may be dictated by topic or urgency (Boyd, 2001; Hemmingway, 2005; Tuchman, 1973; Turow, 1983). In terms of production, there are a certain amount of materials required to fulfill the needs of the viewer, the journalist, and management. Regardless of expectations or hypothesis, the textual analysis reveals little change in the size of news packages despite technological changes.

The number of elements in each news package significantly changes from the 1970s to 2010. It appears there is a dynamic change to the patterns and pacing of the news package. Whether or not technology is to be the reason may be speculative, as there may be other factors such as the changes in audience and the needs to attract their attention. There appears to be an evolutionary development in the pattern structure of TV news stories, shown in the increased number of edits and shorter sound bites. There may be several factors causing the changes. At WKYC-TV, linear editing was converted into nonlinear editing around 2004; until then, the news stories were edited in a step-by-step process. In a linear fashion, the editor would work from beginning to end. First, the editor would lay down the audio track on one channel, and then cut the video and audio of sound bites with the voice-over, and continue this until the story was completed. The length of the story was laid out on videotape. The editor would then go back and insert video on the video track and accompanying natural sound on the second audio track. To modify a story after it was edited was difficult. The news package had to be reedited if any changes needed to be made. Nonlinear editing allows for significant reediting and changes to be made quickly, as the computer timeline is a flexible work area. Audio and video are viewed as "blocks" of material, capable of being moved, repositioned, restructured, altered, duplicated, and managed. Both forms of editing required experience in order to become efficient. Regardless of the method, the final stories appear similar in length and conventions.

As John Ellis believes, "The quality of the footage is hardly relevant; news will accept poor-quality images and poor quality speakers if the immediacy and the importance of the events will justify them" (Gripsrud, 1999, p. 56). It appears the aesthetic quality of TV news is protected from criticism or critical expectations based on the genre's limitations and the strengths of its immediacy to important events.

TV news is an industry with a particular production method like any other capitalistic enterprise. Raw elements are gathered, processed, and delivered to customers. The difference in the makeup of news stories appears in a variety of patterns of the raw material. TV news production may be a patterned and routine assembly of information, technical items, and structures (Kolodzy, 2006, p. 151). It is the daily work of journalists to construct a seemingly different fabric of information from a familiar pattern of presentation. Despite Halpern-Wenger's and Potter's (2008, p. 7) assertions that technology changes content, it may be preferable to say that technology creates new forms of presentation. The research suggests technology may affect the particular patterns and structures of the news story.

Depending on the worker and the environment, multiskilling can be viewed as damaging or enhancing (Hemmingway, 2008; Kolodzy, 2006; Ursell, 2001). It appears the perceived success of the integration of the new work model differs between the worker and the management (Aviles & Carvajal, 2008), possibly fueling the argument that knowledge appropriated by the management is necessarily lost to the worker. The type and level of knowledge differ between groups, and evidence suggests that for the majority of production workers, higher level forms of abstract knowledge are appropriated by management or are built into the machinery (Gray, 2001, p. 337), whereas according to Gray (2001), managers

choose to use information through automation to reduce the level of skills required in the job. This is referred to “de-skilling” and is done to tighten the control of workers (Gray, 2001, p. 337). This action is intended to fragment work, create routines, and even eliminate jobs. Bob Franklin refers to it as the “McDonaldization” of journalism (Allan, 2005, p. 137). The fear is that the efficiency is compromising the integrity and quality of journalism by making journalism dependent upon the production process and less open to flexibility. Routines seem to evolve under the increased pressures from the amount of product a news worker must create. The “routinization” of the journalistic practice helps to create successful outcomes (Harrison, 2006, p. 141). The leaner production is a step toward a post-Fordist state, as workers are more independent in the process of production. The final product does not indicate which mode of production is more efficient. It appears as if the traditional news construction methods and the MMJ methods create similar products.

The view of this study is from a production level and while audience ratings may be a method of gauging success of the organization, the measure of success at the production level is efficiency. News management’s opinion of a successful news organization may be based on the ability to perform work in a timely manner. The creation of news packages using a Fordist or post-Fordist approach is irrelevant if the work is not completed on time. Journalistic freedom may often be limited as reporters use deadlines as milestones of successful reporting instead of exclusive information (Harrison, 2006, p. 141). In the systemized way of reporting, journalists seek a beginning, middle, and end of the story, which they convert into a product, utilizing elements from sources; in trying to expedite their work, there is a tendency to minimize conflicting possibilities as it complicates the presentation and requires additional work (p. 145). It may not be technology that creates these stress factors of production but the increased amount of product required of the news worker.

It may be concluded from this study that the news package has changed over the decades, yet it is hard to determine whether more information is delivered to the audience, as the story length has not changed, and sound bites are shortened, more edits are made and the pacing increases. Further research could explore whether more information is dispersed or is the same amount of information is chopped up for aesthetic reasons. It may also be that the culture surrounding the news gatherers has a greater impact on the act of journalism than the technology they use to perform their jobs (Singer, 2004, p. 5). There are also other factors, which may influence the applications of the technology, such as time. Time management may influence the decisions needed to complete the tasks and construct the product. In that way, the culture may appear to be returning to a different time in journalistic history, when news gathering was not a profession but a process of gathering news and disseminating the information (Örnebring, 2010, p. 67).

Limitations

The textual comparison between the MMJs and the traditionalists is limited in the number of packages produced, as the implementation of the MMJs has not been fully integrated, nor has the method been utilized for a similar period of time.

Because the research is conducted at one particular news organization, it can be viewed as a case study. This case study would be unique, as the division of labor of three individuals to complete a TV news story is becoming extremely rare in local TV. At the time of this article, the arrangement of three individuals at WKYC-TV has been eliminated. The sampling of these stories is from one local TV station. The station chosen creates a majority of their stories with traditional crews of reporter, photographer, and editor. A wider sampling could have been accomplished to expand the geographic range of other stations as well as include more sampling from stations utilizing the MMJs. In order to have expanded the sampling, access to story archives would have to be obtained for a significant period in order to collect data. In the case of this study, access was a key ingredient to the sampling.

Further Research

As news organizations try to please their viewers in various ways, a further study could examine how or if audiences recognize a difference in the production method. Is there a significant difference in the way the audience views a news story produced by a traditional crew and the MMJ? In order to do such a study, individual news stories of the same event, utilizing the different methodologies, would have to be collected. The collected stories would then be presented to several focus groups with supplemental quantitative questionnaires and qualitative interviews. Will social media integration with the audience affect the production model or structural patterns? This study focused on the construction patterns, exploring whether there were significant changes in the product due to technology and the production methods. Whether or not the products were significant to the audience was not part of the study. In terms of the evolution of the production process, does the audience play a role? If there is a significant decrease in the attractiveness of the product, created by the MMJ, does it affect the audience enough to increase the value of skilled crafts individuals?

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1. http://www.nabetcwa.org/news/entry/nabet-cwa_3rd_triennial_conference_unions_face_many_challenges

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