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I am submitting herewith a thesis written by Lydia Wallace Meek entitled "New Technology in Newspapers from the 1920s to the 1970s: Response of Tennessee Newsworkers." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communications.

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NEW TECHNOLOGY IN NEWSPAPERS FROM THE 1920s TO THE 1970s: RESPONSE OF TENNESSEE NEWSWORKERS

A Thesis

Presented for the

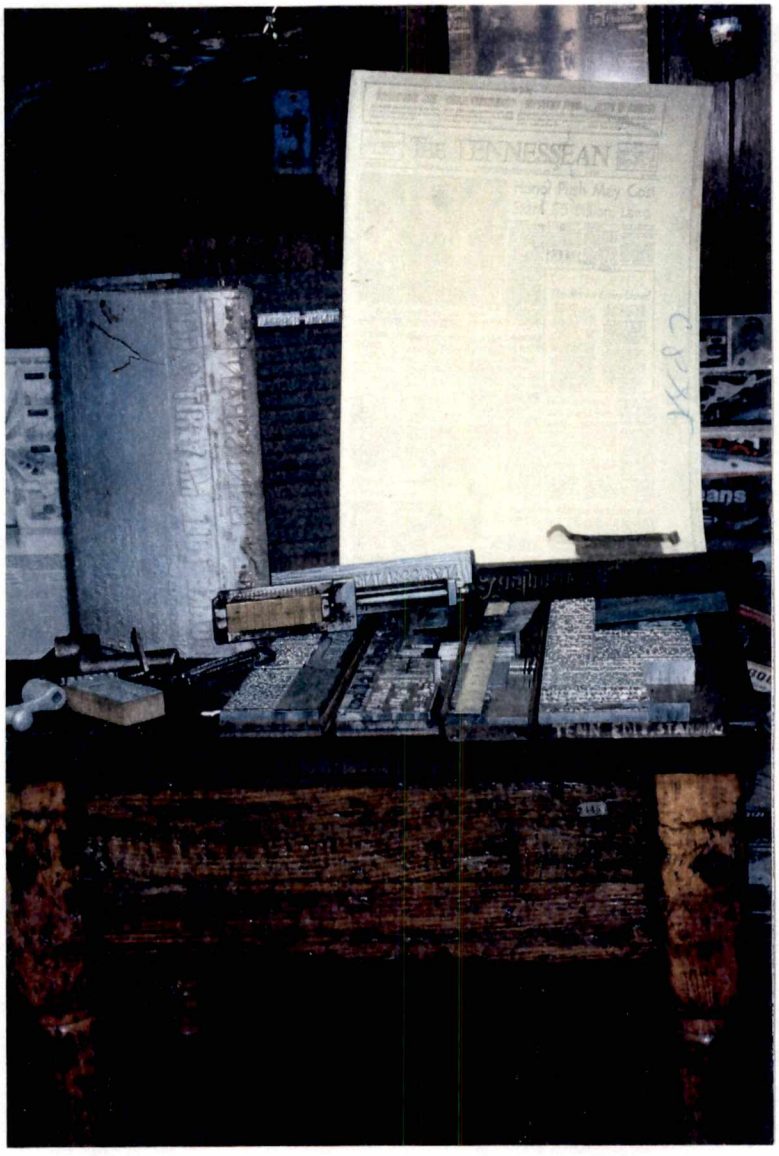
Master of Science

Degree

The University of Tennessee, Knoxville

Lydia Wallace Meek

August, 1993



Courtesy of Oliver Wendell Melvin, Jr.
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ABSTRACT

This study seeks to determine the impact of technological change on persons who worked in the Tennessee newspaper industry from the 1920s to the 1970s. A historical/ qualitative approach was used to collect and analyze narratives submitted by selected newsworkers across Tennessee, working or retired, and in varying newspaper sizes. The participants were asked open-ended questions designed to elicit responses about their experiences with technological change. The responses were carefully read, compiled and analyzed for common threads of perceived reality to build a picture of the impact technology had on these Tennessee newsworkers.

The research question was: "What were the nature, manifestations and commonalities of technological impact on newsworkers in Tennessee from the 1920s to the 1970s?" Even though technological change caused feelings of fear and caution, the excitement and challenge of new technology overshadowed the negative. Despite staff reductions in larger newspapers, cross-training in smaller newspapers, early retirements, union pressure to save jobs, and replacement of men with women, these Tennesseans responded to technology well, all things considered. According to these participants, technology played such an important part in the lives of Tennessee newsworkers that it was either accept and adapt to it, or find something else to do.

The commonalities experienced by these participants were primarily in these areas: perception of greatest technological change observed; displacement, and observation or experience of lead-related disease and injury. A pattern emerged, however, around the term 'isolation'. News/ editorial workers, in particular, talked about the change from the old way to the new computerized way. The news-building process in the newsroom evolved from a more people-oriented, team effort around the copy editor and copy desk to that of an isolated, computer work station scenario from which the final product was generated. The art of interchange and working closely with other minds was seen as fading away with new technology.

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CHAPTER 1

INTRODUCTION

Mass media historians have been faithful to recount factual information on the technological changes in the American printing industry and its economic progress or lack thereof during times of depression and war. In these accounts the emphasis, however, has been on the machine or circumstantial event more than the persons affected.

According to Professor Hanno Hardt of the University of Iowa, the absence of a labor perspective was apparent in his research of traditional media history and technology.[1] Prof. Hardt emphasized the neglect of historians to recognize the "relationship between newsworkers and emerging media technologies."[2] Although he focused on newsroom personnel in this article to stress his point, his position is applicable to all employees of the newspaper industry; otherwise his premise that there is an absence of a labor perspective would be invalid. He discussed the cultural nature of press history in terms that are not exclusive. The individual and

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[1] Hanno Hardt, "Newsworkers, Technology, and Journalism History," Critical Studies in Mass Communication, 7 (1990), 346, abstract.

[2] Ibid., 351.

collective experiences of people involved in the production of news need to be addressed to complete the technology account of the newspaper industry. The cultural whole of the various parts of the newspaper team also needs to be examined to determine the relationship. Therefore, for purposes of this technological study, the term *newsworker* is defined as owner, editor, reporter, typesetter or pressman, or any function in the preparation, production and management of a newspaper, which involved major technological changes. The term to describe the overall management of the newspaper will be described as management, not to be confused with departmental managers throughout the newspaper. The production staff will be those who are physically involved in the typesetting and printing function of the newspaper before computerized newsroom activities took away the typesetting. The terms 'news/editorial' or 'newsroom' will describe the area that originates the information printed in the newspaper.

The purpose of this study is to discover just what impact technology had on Tennessee newsworkers in the 20th century through the 1970s. The parameters of this study end just as the computerized age of the newspaper industry is developing.

Research Question

What were the nature, manifestations and commonalities of technological impact on newsworkers in Tennessee from the 1920s to the 1970s?

Methodology

When addressing the research question, I had to decide which methodology best suited the subject and could most effectively be used to carry out the research. A quantitative approach has been used frequently in social science and to great good. However, other approaches of qualitative, historical, and Marxian economic philosophies also have been used successfully. The method I thought would elicit the most information about personal experiences of newsworkers from a historical perspective, without presupposition, was qualitative. Also, since the information to be gained is historical, a blend of the historical cultural philosophy and qualitative analysis seemed to be the best direction to proceed. I ruled out Marxian philosophy because it is not my own and quantitative methodology because it would not reach the depth of understanding I wished to explore.

Personal interviews were not feasible because of time and monetary constraints, so by mail seemed to be the best choice to facilitate this study. After the literature review, I prepared a list of questions about newspaper technology and its impact. These questions were for the participants to peruse and determine if they wanted to answer the questions or add information they felt to be relevant. (Appendix A) Participants could choose to simply answer the questions or elaborate on their experiences in narrative form. The object was to gather as much variety of information as possible,

while giving the participants an idea of the scope of the project. The questions apprised the participants of the areas of interest I had in this study of technology and its impact. Their additional comments added color and depth to the study.

The original research portion of this thesis began with my correspondence with publishers and/or editors of all 28 of the daily Tennessee newspapers and 35 of the non-daily Tennessee newspapers (with circulation of 4,000 or more and originating circa 1920 or before). In these letters, I explained the nature of the study and requested help to locate individuals still working or retired who might be willing to talk about their newspaper experience. When potential participants in this study were identified, they were contacted by telephone or postcard to see if they were willing to participate. From 51 leads contacted, 43 agreed to participate and 37 actually participated for a response rate of 72.5%.

I sent a packet to each participant that contained a cover letter, the list of questions, a self-addressed, stamped envelope with enough postage to accommodate 8-10 pages, and a consent form to be signed and returned with their narratives. I interviewed one participant in his home, one participant by telephone, received 24 personal narratives in letter form, and received short-answered questions from 11 participants. I have incorporated these narrative accounts into the historical study after researching general technological information of this time period which would set the context for the study.

I wrote to and called the Graphic Communications International Union requesting statistical information on newspaper workers who had been members of their organization during the time period of this study. This Union was founded in 1983 and is composed of the Graphic Arts International Union[3] and the International Printing and Graphics Communications Union.[4] A conversation with Charles Price, membership director of the national office, revealed that the union membership records of Tennesseans involved in the newspaper trade from the 1920s to the 1970s would be difficult if not impossible to compile, and therefore unavailable.

I telephoned The Newspaper Guild's national office and was provided information about membership from 1936 through 1992.[5] The Tennessee Employment Security Service could not provide information regarding positions in any particular industry because of privacy laws that prevent them from divulging any specific information as to job responsibility or gender. The

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[3] This organizations was founded 1972 by merger of International Brotherhood of Bookbinders, founded 1882, and Lithographers and Photoengravers International Union, founded 1964 by merger of Amalgamated Lithographers of America, founded 1882, and International Photo Engravers Union, founded 1900. Encyclopedia of Associations, 27th ed., 1993, 2308.

[4] This organization was founded 1973 by merger of International Printing Pressmen and Assistants' Union of North America, founded 1889, and International Stereotypers and Electrotypers Union, founded 1902. Encyclopedia of Associations, 27th ed., 1993, 2308.

[5] David Eisen, research and information director of the national office of The Newspaper Guild, provided this information. See Appendix F for additional information.

newspaper industry in this case falls under a general category of printing and publishing.

Purpose

The purpose of this study is to add to the body of knowledge of media technology history that had not been explored as thoroughly as other related subjects. Further study could be done on a state-by-state basis to make a composite history. For purposes of this thesis, the research study must be reasonably limited and only be a starting point; therefore, the State of Tennessee is the geographical limit. In order to broaden the scope of the study, research has been conducted in as many historical documents as possible to corroborate the narrative experiences portrayed during these eras of the 20th century.

Organization

The following paragraphs outline the organization of this thesis and explain the intellectual framework and philosophy from which the study's methodology evolved.

The literature review provides an overview of the history of technology and change in the United States. Topics such as displacement, disease, and war, among others will be discussed. This literature search was conducted in general areas of technology and whatever impact had been recorded in the newspaper printing business. It was not surprising that the physical labor of printing was the focal point of historians. Not as much was said about the news/editorial

side of the business. In some cases, news/editorial /management participants had less to say about the minute aspects of technological change. Since most of the participants in this study, however, have worked in more than one function of the newspaper industry, including production, the input of news/editorial blends into production at several points. The newspaper cannot function without its three component parts: production, news/editorial and newspaper management. It will become evident as this study proceeds that cohesion of thought about technology among these divisions of labor was necessary at some key points for new technology to succeed.

The personal characteristics of the participants in this study were described to give the reader an understanding of the character, range of philosophies and ideologies that are represented and how these attributes affect the response to technology. A brief history of newspaper technology in the time period and the range of experience represented is then included to serve as a setting for the technological change experienced by Tennessee newsworkers.

Using traditional qualitative and historiographical methods of collecting, analyzing and interpreting the data from the participants, I compiled an account of technological change and its impact on newsworkers in Tennessee from the participants' perspectives. Background information on the participants was extremely useful in gaining some

understanding of the person behind the newsworker, his or her work philosophy, and experience and attitudes toward the newspaper industry. The analysis of this information was conducted in a time-consuming, methodical way. Conclusions were drawn as to common experiences among newsworkers and, based on information gathered, interpretation was made outlining the relationship of attitudes and resultant coping in times of change. This particular analysis was performed by summarizing key words and phrases from narrative to narrative to determine the likenesses and differences among perspectives. The information also was segregated by geographic region[6] and the same pattern of analysis was performed again.

Historical and qualitative approaches require much time and thought, but yield rich data about perceptions of reality. The participants come to this study with a variety of geographic, job, and philosophic characteristics who experienced technological change in the newspaper industry during the 20th century. The personal experiences of these phenomena can and do have multiple realities. These are observations and experiences by highly individualistic people who all have a different approach to reality. However, there are common threads among these people with different approaches that make them a little more alike, while being as different as genetically possible.

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[6] See Appendixes C, D, and E for definitive regions.

This research seeks to recount the history of technological impact through the narrative experiences of newsworkers and to be a voice to express not only the who, what, when, and where, but the *why* of their experiences. For instance, in reading history, there is not always a clear answer as to *why* people reacted in a certain way to change. The *why* of this thesis is evident in the personal responses which so eloquently describe reactions to technological change. It is these participants' collectively expressed thinking about experienced phenomena, not strictly an outside observer's, which reveals the answer to *why*. It is the researcher's responsibility to glean from their experiences and compile the information in a coherent and organized manner based on thoughtful consideration. The *who* precedes the *why* before the impact of technology can be understood. Why did the newsworkers react the way they did? It was because of who they were and are.

It can be argued that personal narratives have limited reliability. Singularly, that may be true, but collectively and carefully analyzed, narratives can open up a wealth of information about the people behind the history, which in turn can be corroborated by the common experiences shared, the credibility of the participants, and as compared to existing literature. History is devoid of meaning without the personal experiences which surround events. Therefore, the personal

narratives used for this study are be considered valid evidence for study.

It also can be argued that personal narratives are not necessarily objective, therefore not necessarily valid. This argument is based on the fact that social scientific studies are conducted in a strictly impersonal way to obtain accurate and objective information. But one needs to keep in mind that in answering a strictly quantitative questionnaire, it is still the subject's opinion about the questions presented. There is no such thing as strict objectivity as long as human beings have freedom of thought and creativity. Each person brings his or her own unique reality to the situation.

One final argument against these personal narratives and the method in which the information was gathered may be that *it is not generalizable to the population studied*, nor to the population as a whole. That particular quantitative paradigm is not conducive to an effective study of the *why* of human behavior in a historical context. It would only induce surface 'facts' and be certainly no more, if not less, informative in the course of research than this study. In fact, it could be superficial. This study opens the possibilities for more research which would in turn generate more theory about the behavior of people in reaction to change.

After the background is set, the characteristics of the newsworkers as mentioned above are outlined. This will

introduce the reader to the *who* of this study. After the players are introduced, the technology will be discussed in general terms for the time period in question. This further sets the technological background in which the participants have operated. Then comes the heart of the matter. How the newsworkers reacted to change, and then what this change did to the newsworkers' attitudes, jobs, and working conditions?

A good analysis demands some good conclusions. Following all this, comparisons will be made to determine what common ground any of these participants had about technological change. It will be noted where there are marked differences as well. In quantitative methodology, these would be anomalies, or unusual occurrences. In this study, these will be unique characteristic differences. Based on the foregoing, some general conclusions will be outlined and suggestions made for developing theory and further research.

CHAPTER 2

BACKGROUND

Literature review of U.S. technology and change -- 1920s through the 1970s.

Technology. A clear understanding must be gained about the nature of technological change before assessing the impact of that change. In the printing industry, of which newspapers are a part, automation was and continues to be a hurdle to overcome in the contest of man versus machine. Because technological change primarily revolves around machines, typesetters and pressmen historically have been the primary focus and beneficiaries or victims of change. Therefore, documentation of such change focuses primarily on the production side of the printing industry in general.

As a background for general technological change, Cooke and Murray outlined what they perceived as the steps of technological advancement. They asserted that "[t]he growth of technological development is not only dynamic but it is also compounded. An improved tool is used to build a better machine, which in turn is used further to improve the tool in

order to build a still better machine."[7] This is accomplished by mechanical and non-mechanical means. Of the nine mechanical and five non-mechanical steps Cooke and Murray note as the components of technological evolution to build a better machine, the human factor is mentioned only once under the general category of *non-mechanical* means. This was the "[i]ncentive to greater efficiency on the part of the workers and management."[8] This heavy focus on the machine, with so little focus on the human effort or concern, indicates the priorities of technology builders. With this kind of framework in which technological process has traditionally been viewed with a dominant emphasis on the machine, there is little doubt that the viewpoint of the worker is left behind. He is but a cog in the wheel of the giant industrial machine.

Industrial relations researchers have concluded that, in general, automation focuses on a continuous process rather than on individual parts of the process.[9] Before automation, the worker was focused on his or her individual task to the exclusion of others' responsibilities. This isolationist mind-set was shattered with the advent of equipment and processes that required cross-over skills or work on a team to

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[7] Morris Llewelyn Cooke and Phillip Murray, Organized Labor and Production. New York: Arno & The New York Times, 1971, 160.

[8] Ibid., 161.

[9] George P. Shultz and George P. Baldwin, Automation: A New Dimension to Old Problems. Washington, D.C.: Public Affairs Press, 1955, 19.

get a particular job done. New technology challenged isolation and demanded flexibility and more teamwork.[10] If a task was modified or eliminated, the worker was in the position either to adjust to the modification, either by training or adaptation, or relinquish that task. The ability of the worker to understand that his or her task is a part of the whole, and the performance of that task must function as part of the whole would determine whether the worker was able to cope with that change. The struggle of man and machine continued, only with other people involved. This struggle will be one of the integral parts of this study. The question needs to be answered as to how did the Tennessee newsworkers deal with the change?

Industrial relations problems associated with technological innovation included a wide range of potential for learning about attitudes toward technology. The production worker was paid by the hour for as many hours as were needed to get the job done. As machine efficiency increased, the production worker was concerned about the impact of reduced working hours and resultant overall decrease in pay. Anxiety and fear were uppermost in the minds of the workers when a change in the way they did things might cause potential job loss or job restructuring that could lead to loss of seniority, standing or status among fellow workers. The technological change could cause a re-classification of

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[10] Ibid., 13.

jobs by the union, a restructuring within the union itself, and a greater responsibility of the worker to accept the expansion of job classifications.[11] Of all the fears the worker faced with change, displacement in the work force was the greatest. Inability to adapt or reduction in manpower to operate the equipment meant the potential of job loss. This created more than economic problems; it also created social problems. The loss of self-respect, community standing, standard of living, and hope for the future came together to create a poor image of self and society.[12]

Since there has been little compilation of information directly relating to newsworkers and technological impact on the newsworker from a historical perspective, the task of gathering information for such research is a challenge. Industrial relations literature, as already mentioned, is a primary source of general information on workers and industrial change in the United States. Books about detailed printing technology lend themselves to the technical aspects, which set the framework for discussion. The Penrose Annual, a unique publication which primarily discusses the evolution of typography, was compiled in an anthology which included articles on the historical and cultural development of the printing industry. As the actual press machinery changed,

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[11] Ibid., 11-12.

[12] Ibid., 17.

typesetting as an integral part also changed.[13] For instance, the potential impact of the rotary press on the worker was that "if he [the printer] cannot get enough work for the precision operation he must still need traditional make-ready skills ... printers cannot be criticized if they keep one foot in the craft camp while the industry remains in a curious halfway stage of development."[14] This transition from hand craft to specialized, mechanized craft is of significance to this study on the impact of technology on the newsworker in Tennessee.

An important industrial relations problem addressed in the literature was wage structural adjustment.[15] As suggested previously, new equipment, such as faster presses, required fewer man hours to complete the task. So the question became how would the men who were paid for 80 hours a week be compensated for only 60 hours per week? Another industrial relations problem was union re-classification of jobs and internal structure of the make-up of unions. The concept of teamwork and expanded job classifications created problems for workers in addition to what unions were doing internally to cope with the problem. Most of all, workers faced fear and

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[13] James Moran (ed.), Printing in the 20th Century: A Penrose Anthology. New York: Hastings House, Publishers, 1974.

[14] Penrose Annual (1970). New York: Hastings House, 1970, 198, col. 1.

[15] Ibid.., 11.

anxiety created by uncertainty of whether they would continue to have jobs, or would be able to adapt and learn new job skills necessary for continued employment.[16]

Of all these factors, displacement took first priority as a problem. What do workers do when their jobs no longer exist? This research will explore just how serious displacement was with the newsworker during technological change and whether displacement might have been a good thing for some people, while remaining a terrible ogre to others.

Displacement. According to Cooke and Murray, technological change has two effects: "displacement of labor and sometimes of capital...and the cumulative effect of technological development under...conditions of capital and price control by large corporations ..."[17] In other words, to the extent possible, industry controls capital and price, as well as resulting displacement of workers, based on business decisions. George Barnett's research on technological change and the Linotype, however, introduces the idea of printing industry displacement and presents a better perspective than is described in general industry terms. In a Yale Review article in 1904, he discussed the transition of what he called the 'sixteenth century art' of typesetting to the late

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[16] Ibid., 12.

[17] Cooke and Murray, 164.

nineteenth century arrival of the Linotype.[18] The fact that typesetting technology had not changed radically in four centuries is significant in understanding the sometimes overwhelming reaction to the new printing technology introduced in the 20th century. At first Barnett calculated that at the turn of the century there appeared to be significant displacement of workers. However, he explained that the increased output of machines, the necessity of cross-over skills, and the willingness of most workers to learn the new machine, actually resulted in an expanded demand.[19] Barnett also credited the International Typesetters Union with the relative ease in which the typesetters moved from hand craft to mechanized craft. Union insistence that printers be employed as Linotype operators eased the transition and averted what could have been an industrial disaster.[20]

Organized Labor. Unions were created in the middle 1800s to stabilize the industrial working environment and to try to guarantee jobs for workers at the highest pay. The typographical workers organized in 1852, and later formally took the name International Typographical Union in 1869.[21]

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[18] George E. Barnett, "The Introduction of the Linotype," The Yale Review, Vol. 13 (1905), 251.

[19] Ibid., 255.

[20] Ibid., 270.

[21] Elizabeth F. Baker, Displacement of Men by Machines. New York: Columbia University Press, 1933, 110.

The pressmen formed their association in New York City on October 8, 1889, and initially called themselves the International Pressmen's Union. In 1897 the name was changed to the International Pressmen's and Pressmen's Assistants.[22] Some of the reasons given for the formation of these unions were: possession of travelling cards, which allowed craftsmen to cross state lines and move from one union shop to another; the establishment of localism of the Union; a way to pool resources and to create strike funds; a way to oversee local unions; to arbitrate disputes; to collectively bargain; to organize new locals; to centralize power; and to facilitate common policy making as new technology emerged.[23]

Traditionally, the "attitude of the organized and unorganized wage earners toward the introduction of machinery was one of hostility" which resulted in a diminution of the skilled trade from the skilled workers' perspective. The trade unions also were 'bitterly' opposed to new machinery. The unions' primary goal in the 1920s was to prevent worker displacement.[24] As the trade unions gained control of strategic placement of union workers, the hostility diminished. The International Typographical Union did not

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[22] International Printing Pressmen and Assistants Union of North America, A Keepsake of the I.P.P.A.U. (38th Convention, 1964). New York: I.P.P.A.U., 1964, 62.

[23] George E. Barnett, "The Printers," American Econ. Assoc. Qtrly, 3rd Ser., Vol X, No. 3 (Oct. 1909), pp. 33-40.

[24] Ibid.

oppose the Linotype. The I.T.U. demanded control over it and payment of wages equal to those paid to hand compositors. The increased physical and mental strain of operating the Linotype compared to hand composition also led to justification for reduction in the number of hours worked in a day.[25] The Linotype operator and hand compositor still had to have some of the same skills, except the Linotype operator had to increase mental agility. The strength and persistence of the International Typographical Union was credited with the stability in the compromising attitude of the worker toward technological change. The method used by the I.T.U. to ensure stability included (1) union threats to boycott the larger newspapers that were organized; and (2) placement of trained but displaced Linotype operators in smaller newspapers as Linotypes were acquired.[26]

A significant historical relationship between the I.P.P.A.U. and Tennessee pressmen was the Pressmen's Home in Hawkins County, East Tennessee. The school portion of this institution opened in 1912 to meet the need for re-training as technology changed, and the tuberculosis sanitorium opened in 1916. The entire operation closed in 1967.[27]

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[25] Ibid., 126-27.

[26] Ibid., 128.

[27] James Jackson Mooney, Ph.D., The International Printing Pressmen and Assistants' Union of North America at Pressmen's Home, Tennessee 1907-1967. Dissertation (Dec. 1984), 94, 120, 185.

This institution was promoted by and built under the leadership of I.P.P.A.U. president, George L. Berry, a native Tennessean. Berry praised the Union, during its first annual meeting at Pressmen's Home, for its support of "efforts to promote education and efficiency and to meet the humanitarian requirements of our aged and afflicted membership in the building of a great trade school, a great home for superannuation and a sanitorium for our tubercular affected members."[28] Tuberculosis was considered such a threat to the pressmen that the Pressmen's Union felt it necessary to provide a place where those afflicted could recuperate or die peacefully, whichever the case. The Pressmen's Home also became the national center of activity for the I.P.P.A.U.'s training and education, and a repository for statistical data on the Union's activities.

A late-bloomer in the organized labor movement in the newspaper industry was The Newspaper Guild, founded in 1933. It was a rocky start for the professionals who had trouble seeing themselves as an organized labor union.

> Despite the seriousness of their situation, many journalists preferred to continue following their individual courses, and although a considerable number of newspapermen did evince an interest in unionizing, there remained the problem of sustaining any kind of joint activity among them.[29]

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[28] The Journal and Tribune, Knoxville, Tennessee, June 20, 1916, p. A-1, col. 3.

[29] Daniel J. Leab, A Union of Individuals, the formation of the American Newspaper Guild, 1933-1936. New York: Columbia University Press, 1970, 18.

This need for organization evolved as men and women of the newsroom felt the same needs as production workers for shorter hours, better pay, collective bargaining, vacation with pay, a minimum wage scale for men (no mention of women), among other benefits. One significant aspect that has not been widely publicized is that in the early 1900s newsroom personnel would be the first to be laid off in hard times because the production unions had contracts with manning clauses that had to be fulfilled. The only way some newspapers could stay in business, especially during the Depression, was to either lay off newsroom personnel, pay them less, or ask them to work part-time.[30] In reaction to these kinds of conditions, the Guild of New York Newspaper Men and Women was formed in September, 1933. Later that year, this group held a national convention and the American Newspaper Guild was formed. In 1972 it was renamed The Newspaper Guild and is affiliated with the AFL-CIO.[31]

Women. The newspaper printing industry, as in all industries in the 20th century, has been dominated by men. Women penetrated the United States printing industries in a more organized fashion in the early 1900s, although they had been working in the industry as early as the Civil War. They were generally denied apprenticeship training at first until

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[30] Ibid., 28-29.

[31] Encyclopedia of Associations, (27th ed., Vol. 1), 1993. Detroit: Gale Research Inc., 1993, p. 2396.

acceptance by the male-dominated Unions. Kindly shop owners would intentionally look the other way while the women would learn the trade, even though technically it was a union violation. The attitude of union men was to see women as 'rivals', but this slowly changed toward acceptance. Women would work for less money than men and were available during strikes. This posed a serious threat to the male-dominated unions. Women formed their own unions such as the National Women's Trade Union (1903), but in self-defense, the male trade unions began to encourage women to join their unions so that there would be no pay undercutting.[32]

Industrial Disease. The technology, which helped publishers succeed in gaining a larger newspaper audience, had physical side effects on the newsworker and caused reaction from the trade unions. One of the most obvious side effects of printing press environment was disease. Paper dust, chemicals, inks, and lead were threats to pressmen and typographers, and anyone else with consistent exposure to the atmosphere. The heavy flatbed presses in newspapers that used hot lead bring to mind lost fingers, burns and other accidents. In 1922 the Monthly Labor Review contained this description of the mortality rate of printers and the causes:

> The mortality of printers is above the standard at all the age groups dealt with. *** Their mortality figure

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[32] George Gorham Groat, An Introduction to the Study of Organized Labor in America. New York: The Macmillan Company, 1926, 153-160.

> is 1,096,[33] which is higher than that of occupied males by 15 percent. Like bookbinders, **printers die very rapidly from phthisis** [tuberculosis], and probably for a similar reason, namely, **because of the excessively unhealthy conditions under which their work is carried on**; their mortality from diseases of the respiratory organs, other than phthisis, is, however, below the average, as is also their mortality from alcoholism. From diseases of the nervous, circulatory, digestive, and urinary systems, their mortality is in excess of the standard. Printers suffer only about one-third as much from fatal accidents as do occupied males, but they are somewhat more addicted to suicide; their mortality figure for lead poisoning is 3.[34]

Cheap solvents used to clean presses and human hands destroyed human tissue and was something that early writers also warned the printing industry about. Replacement of other substances for the oil of turpentine used to clean hands caused skin disease and injury. Other substances such as Benzin [benzine], lye, petroleum, and certain kinds of pine oil were used because they were cheaper. Benzin, even then, was considered toxic and was used most often.[35]

The paper dust, the long hours, the enclosed environment with chemicals and ink all contributed to what some writers think as the high illness and death rate of tuberculosis (phthisis) among printers.[36] The mortality experience of the

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[33] Footnote from original text omitted.

[34] United States Bureau of Labor, Monthly Labor Review. Washington, D.C.: U.S. Government Printing Office, Vol. 15, No. 5, November, 1922, 180. [emphasis added]

[35] "More poison in Newspaper Offices," Literary Digest, Vol. 47 (Dec. 6, 1913), 1113.

[36] Richard H. Shryock, and William H. Welch, National Tuberculosis Association 1904-1954. New York: National Tuberculosis Association, 1957, 33.

Typographical Union in 1929 figures out of total deaths of 1,090 was 211 from non-specified diseases of the heart, 105 from pneumonia, 91 from tuberculosis, 85 from cerebral hemorrhage and 76 from unspecified cancer. There were no reported deaths from lead poisoning.[37] However, deaths caused by lead absorption may have occurred, but reported under primary conditions such as acute and chronic nephritis. Tuberculosis as a contagious disease was thought to be such a menace to the printing industry that prompted the I.P.P.A.U. to build the Pressmen's Home in East Tennessee.

Urban areas were the predominant geographical breeding ground for tuberculosis. In general, poverty, poor nutrition, substandard hygiene, and long working hours, encompassed under the research categories of occupation and social habits, were considered by researchers as contributing factors to the spread of the disease.[38] The pressmen by nature of their jobs were more susceptible to disease. Large cities were hotbeds for the virus. Shryock and Welch's tuberculosis research indicated that urban death rates were higher than rural, no matter how large or small the city. It was considered the 'White Plague'.[39] The contributing factors to susceptibility were "poor diet, long working hours, lack of fresh air, and

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[37] Ibid.

[38] Ibid.

[39] Ibid., 64.

unsanitary conditions."[40] Before labor laws prohibited using children as the newsboys (including a few girls), the newsboys were common in the larger cities and exposed to the dust and potential disease exacerbated by the conditions in the pressroom.

War. Prior to the 20th Century, war generally brought prosperity to the home front because of increased needs during the war. Industry that supported the war effort and agriculture were the primary industries to profit. No so in the 20th century. The economy actually had been overstimulated, according to Abrahamson, with high inflation and debts of war reducing consumer buying power.[41] He also contends that war created an environment in which government had more control over American society than at any other time, particularly in the banking and finance industries. In this century there has been more of a reliance on a volunteer market economy than in times past when the government would commandeer whatever it needed to go to war.[42]

Another factor that affected and actually helped industry, including printing, was that women worked in men's jobs while they went off to war. The Saturday Evening Post (January, 1917) quoted a production executive as saying, "Women are

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[40] Ibid. p. 33.

[41] James L. Abrahamson, American Home Front. Washington, D.C.: National Defense University Press, 1983, 172.

[42] Ibid., 173.

wonderful workers along mechanical lines." The necessity of women working during wartime reinforced their desire to continue to work in what had been, for the most part, a man's world.

During World War I and World War II, the government stepped into the economic picture to help stabilize labor and the economy by creating the National War Labor Board (WWI) on February 25, 1918,[43] and the National Defense Mediation Board (WWII)[44] on March 19, 1941. The charge of the two boards was to "enable the prosecution of production without stoppage of work"[45] through arbitration and mediation. During WWII, another charge was added: "to assist in establishing methods for resolving future disputes when requested by parties ... and ... investigate issues, make findings of fact, and publish recommendations for settlement."[46] The unions agreed to the government's arbitration and voluntarily did not encourage strikes or lockouts during wartime.

The Great Depression. The printing industry seemed to weather the Depression in better form than some of its other industrial compatriots. Urban areas were hit the hardest, while people in rural areas, were perceived to be used to

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[43] Abraham L. Gitlow, Wage Determination Under National Boards. New York: Prentice-Hall, Inc., 1953, 93.

[44] Ibid., 112.

[45] Ibid., 92.

[46] Ibid., 112.

living off the land, and, therefore, should be able to subsist a little better than urban dwellers.[47] Unemployment was less for women than men, probably because more men were out of work, forcing the women to have to go to work.[48] There were more unskilled than skilled workers unemployed during this era,[49] which indicates that the skilled trades such as printing fared better than others. Unionism had been weakened during the twenties and during the Depression was demoralized.[50] "Practically all unions except those in building construction, public service, printing, and entertainment lost business."[51] This trend toward stability in the printing industry has been consistent throughout the readings thus far.

Conclusion

The foregoing overview of the historical settings provides a general background for the study of Tennessee newsworkers during this century. Later, this information will be compared with the conclusions developed from this study. The next chapter deals with the people who participated in the study, their backgrounds, talents, philosophies and ideals.

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[47] Broadus Mitchell, Depression Decade from New Era through New Deal 1929-1941. (Vol. IX of The Economic History of the United States). New York: Rhinehart & Company, Inc. (1947), 107.

[48] Ibid., 98.

[49] Ibid., 97.

[50] Ibid., 268.

[51] Ibid.

CHAPTER 3

THE PEOPLE BEHIND THE NEWSPAPER

Characteristics

The participants surveyed in this study have worked and lived in Tennessee from the late 1920s until the present. A few are retired from the newspaper industry but maintain an active interest. Although there are geographic comparisons made about response to technology later in this study, a preliminary overview of these participants' experiences show no significant geographic boundaries regarding character qualities such as diligence, hard work and loyalty to individual crafts within the newspaper. One might think that even the size and kind of newspaper in which they have worked and/or work today would make a difference in the character and persona of these people. From the large dailies to the small weeklies, there are common characteristics that make newsworkers who they are, and as a result, and influence how they think about technology. One could conceivably place these newsworkers in some other part of the state or nation and the major character traits that make them who they are would not change.

The amount of experience also does not seem to make any difference in the character of these Tennessee newsworkers. The range of experience represented in this study is 21 years to 60 years, and for the majority, still counting. The difference in management, news/editorial, and production job responsibilities does not shake the image of the Tennessee newsworker. Dedication, hard work, love for what they do. All of these factors and more shape the image of what is the character of the Tennessee newsworker, regardless of job title.

When and how did the people in this study get started in the newspaper industry? Nine participants began their careers in the 1920s and 1930s; 12 started in the 1940s; 10 in the 1950s; five in the 1960s; and one in the 1970s. Ten of these participants cited a family newspaper business as the reason. At least half of the participants in this study began their careers after World War II. Of those who began their careers prior to WWII, the general consensus was that there was little change in the industry from the time they entered the war effort and when they returned.

Some of those who served in the war returned to school to train as journalists, or actually had their first job in the newspaper industry after the war because it was what was available. Two of the participants actually worked as journalists/press personnel during the war effort.

Horace V. Wells, Jr.,[52] told of his experience in the war effort back at home in Clinton, Tennessee during WWII. A hosiery mill in the area had an over-supply of 'gray stock' (unfinished, undyed, unpaired and un-boxed silk hosiery). The government needed the goods and the mill needed the assistance of the newspaper's printing operation to print tissue inserts in the boxes of hose. In this instance the newspaper had an unusual function to help the war effort. There was no other specific mention of economics or business conditions during the war. Technological change was not mentioned.

The Depression and the availability of a job was another reason for entering the newspaper profession. Most of the participants in this study are a bit too young to remember the Depression as adults. Those in this study who do, mentioned it only in passing. Horace Wells actually started a newspaper on a shoestring during the Depression in East Tennessee. But he talked also of the bankruptcies of some of the larger papers in Knoxville and Nashville that prompted him to move to a smaller town.

Of those participating in this study, there were five in the Eastern region who either started work during the Depression, entered school to study journalism, worked in father's shop, or started a newspaper. There was one in the Western Region who worked as an older teenager in a newspaper,

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[52] Horace V. Wells, Jr., is editor emeritus and former owner/publisher of The Courier-News (Clinton), and state news editor at the Tennessean (Nashville).

with the rest of those participants beginning work after 1949. In the Middle Region, one participant worked as a compositor from 1933 on, and the rest started their jobs after 1943.

Tragedy was also a factor in forcing a decision for a newspaper career. Richard S. Jones lost his father at the age of 16 when his family lived in Missouri. He immediately took over the business, and he says he was then declared the "youngest editor of a legally-established newspaper in the state of Missouri."[53] Others tell of 'working' in their father's shop at ages that people nowadays would consider illegal, even though the actual work performed would probably be highly questionable. After all, curiosity is a child's preoccupation. Newspaper people indulged this curiosity in their children, when allowable. Grade school, high school and college interests in writing, reporting and editing school newspapers spurred some to continue in the trade. Again, curiosity, fascination, native skill and intelligence played an important role in the development of these people in the newspaper industry. A few cited happenstance, a better-paying job (at that time), and military experience as reasons for continuing or beginning a career in newspapering. Some even said that they had printer's ink in their veins, figuratively speaking, of course.

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[53] Richard S. Jones is editor and publisher of the Lake County Banner (Tiptonville), and formerly worked as a compositor, reporter and ad salesman.

How do newsworkers view their trade? Most see it as an 'honest trade'[54] which is very rewarding and is an "opportunity to contribute to society in a tangible way."[55] This concept of the newspaper as a contribution to society was echoed over and over again as participants explained what was exciting about their work. There were also times that the pace of putting together a newspaper was so stressful that it would lead to doubts as to whether to "take this job and shove it," as the song goes. From the editorial perspective, Ruth Thompson told of this fleeting feeling, but followed it by saying, "As the next day's newspaper begins being pulled together, the printer's ink begins coursing through my arteries and I'm back where I should be, loving this job."[56]

Another perspective unfolds with the priorities expressed by newsworkers as they go about their daily tasks. Tutt Bradford succinctly states his business philosophy as a publisher: "Readers come first, employees second, and

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[54] Max Adams narrative. Mr. Adams is production manager at the Kingsport Times-News, and is a former apprentice and journeyman printer.

[55] Bob Atkins narrative. Mr. Atkins is chief executive officer and publisher of The News Examiner (Gallatin) and formerly worked as general manager, ad layout and salesperson, and in the composing room and mail room.

[56] Ruth Thompson narrative. Mrs. Thompson is a retired copy desk editor for the Knoxville News-Sentinel, and was formerly a reporter, state editor, Sunday editor, telegraph editor, and make-up editor.

stockholders third."[57] One might think that the stockholders would be offended at being third in this ranking. When the paper meets the readers' needs, however, papers are bought. When the paper meets the employees' needs, quality papers are produced. Then, the stockholders will be satisfied with quality newspapers and money in the bank for their investment.

One personal need met by working in the newspaper industry, which more than likely would not be expressed in most traditional history books, is the benefit of being in the middle of history taking place. Fred Comer said that working in newspaper production gave him "a feeling of knowing what was going on in your city, state, nation and worldwide before most of the rest of your community knew about it."[58] Of course, he continued, that was before television news and CNN. Buddy Jones, also in circulation and production, said, "There is a real excitement in knowing facts and events that, even as they are happening, will go down as historical events."[59] James Murray echoed this sentiment, "I like history and

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[57] Tutt Bradford narrative. Mr. Bradford is retired publisher of the Maryville Daily Times. His previous experience included newspaper boy, carrier, head carrier, and he work in the mail room, circulation, and advertising departments in various newspapers.

[58] Fred Comer narrative. Mr. Comer is a retired typesetter, make-up man, and apprentice in the composing room of the Knoxville Journal.

[59] Buddy Jones narrative. Mr. Jones is manager of building, property and maintenance at the Oak Ridger. He formerly held positions of newspaper carrier, manager of Circulation, apprentice in the press/composing room, composing room foreman, and production manager.

newspapering makes you a part of living history and at the same time record history for future generations."[60] Walter Pulliam summed it up by saying "A newspaper person is an observer at the very center of history as it is made."[61]

These newsworkers describe everyday working life in the middle of history as it unfolds in glowing, yet sometimes poignant terms, and yet detail some of the harshness of reality in dealing with hypertension, lead poisoning, brutal accidents with heavy equipment, alcoholism, and other stress-related disease. Stress as a negative force is mentioned time and time again. Through all this, all but two of these participants would do it all over again, if they had a chance. This brings to mind just to what extent most people would go before giving up in a job situation that could literally kill them. Significantly, the two who said they would rethink the newspaper industry for a vocation did so because they have other interests, not because of some aversion.

Work ethic and pride of workmanship were predominant linking themes in response to what excited these newsworkers. The rewards were not tangible in this business in the sense of

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[60] James Murray narrative. Mr. Murray is executive editor of The Herald Chronicle, formerly compositor, reporter, editor and newspaper production supervisor.

[61] Walter Pulliam narrative. Mr. Pulliam is the publisher of The LaFollette Press, Jellico Advance-Sentinel, and Lake City Town Crier, formerly owner of the Harriman Record, city editor of the Washington Post, copy reader for the Knoxville Journal and reporter for the Knoxville News-Sentinel, and staff member on the U.S. Army's Mediterranean Stars and Stripes publication during WWII.

big pay and recognition in many cases. However, descriptions like "never a boring day"[62] and "taking pride in a creative project that hopefully would have some impact on the welfare of the community"[63] combine the work ethic and personal satisfaction factors that evolve from these expressions. The newness of each edition and the satisfaction of the product, whatever the personal cost, was expressed over and over again. This positive work attitude persisted throughout the narratives of the participants in this study.

The non-daily newspaper participants in this study talked about the employment size and equipment limitations of the small newspaper that is typical of most of their counterparts historically. A small number of workers have to learn and carry out more than one major responsibility. Even those participants who work or have worked in the larger newspapers are multi-talented. This flexibility trait is evident in this study. The chart at the end of this chapter indicates the scope and depth of job responsibilities and talent represented in this study. Even those who are now or have been top executives or publishers in the newspaper industry are not typical when compared to many business people. Many of them started out at the very bottom and worked their way up through every facet of the operation, the hard way.

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[62] Bob Atkins narrative.

[63] Fred Drewry narrative. Mr. Drewry is editor and manager of The Herald Chronicle (Winchester).

It would probably be difficult to find many corporate executives who worked in the mail room, or who typed copy. The nature of the business is unique. Its corporate culture, to borrow a term born from business in the 1980s, is unusual. Aside from monetary considerations, its purpose, unlike most for-profit institutions, is noble and altruistic framed on constitutional values of free speech. From newsboy to printer's devil (later, printer's apprentice), from stringer to editor, these newsworkers learned the business from the inside out. Most of those who now own papers started out at the bottom, even if their families owned the paper. This shows a relationship between the strong work ethic history and the way newsworkers in Tennessee exhibit their talent for training employees, and producing and managing the newspapers, while standing firm on freedom of speech.

Some of the participants explained their philosophies about the newspaper business not unlike the way the textbooks describe the obligation of the newspaper to the public in disseminating the news. David McCoy of Clinton, Tennessee, expressed it well when he said, "We consider ourselves the community watchdog, insuring taxpayers their funds are being used properly and to their best interests." He continued, "We cannot please every subscriber in every edition. If we did that we'd be publishing a weak product."[64] Responsibility and

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[64] David McCoy narrative. Mr. McCoy is publisher of The Courier-News (Clinton), formerly advertising manager and circulation staff of the Oak Ridger.

quality factors attributed here to the newspaper are carried over into editorial decision making. Ruth Thompson regrets some of the lacks in typographical quality in newspapers today primarily because the human scrutiny of grammar, spelling, and syntax have been relegated to technology. The computer can only do so much and cannot make intelligent decisions for which the human mind was designed. But Richard Jones is still optimistic about the personal responsibility of the writer when he says "I have never written a piece that couldn't be improved."[65] If this is a prevalent editorial attitude, it makes it a little easier for one to overlook an error or prose in need of pruning.

This chapter may suggest a glowing, optimistic view of the newspaper industry and the people behind the scenes. At the same time, the brief description of the hazards of the industry may imply that newsworkers are martyrs. This is not purposeful, only a representation of reality through the eyes of the newsworker. These people really like their jobs and editors across the state did not choose them for any specific reason other than their contribution to the industry. The following chapters will delve further into the reality of the industry and the relationship of people to technology. It was necessary to present who the people in the industry are before describing their reactions to technological change. The good points and not-so-good points will then be explored.

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[65] Richard Jones narrative.

Newspaper Job Responsibilities

It would have been easier in the course of this research to outline job responsibilities in the newspaper industry simply as production, news/editorial and management. These are the large categories from which the participants in this study come. However, the multiple talents described in this section reflect and assign credibility to this research and are worthy of recognition. These participants were randomly selected by editors and publishers across Tennessee; therefore, determining beforehand just what talent would be involved in this study would have been impossible. However, the diversity of talent and flexibility displayed by these participants more than adequately encompasses the range of job descriptions of newsworkers in Tennessee. The numbers of job responsibilities and titles on the chart obviously outnumber the participants in this study (37). Most participants fit into three or more categories. Any one job responsibility could easily have been experienced by a number of the participants in this study. The knowledge that several of these participants literally cut their teeth on the industry will assist in comprehending the scope of the job diversity. There are only a few instances in which participants did not work in production and news/editorial at some time or another.

The following are by no means all-inclusive--some of the terms are archaic--but reflect the majority of employment responsibilities in producing and managing a newspaper.

Newspaper Job Descriptions

ad layout/design
apprentice pressman
building, property, maintenance manager
CEO
circulation
columnist
composing foreman
compositor
darkroom technician
director, executive
editor
editor, assistant managing
editor, associate
editor, business
editor, city
editor, copy
editor, executive
editor, features
editor, managing
editor, make-up
editor, news
editor, sports
editor, telegraph
general manager
journeyman pressman
Linotype operator
machinist
mail room
make-up man
news writer
offset letterpress operator
offset operator
owner
photographer
press room superintendent
printer
printer's devil
production manager
publisher
reporter
sales
sports writer
stereotyper
typesetter
typesetting maintenance
vice president and general business editor

CHAPTER 4

THE HISTORICAL PERSPECTIVE

Technology from the 1920s through the 1970s

Technology had not really changed much in the pressroom from the early 1800s until the 20th century. The early press and typesetting processes developed from a screw-down press operation that began in the 1800s into a form closer to what the printers in the early 20th century used. The kinds of presses mentioned most often in this study are flatbed, rotary and offset lithography presses. Their companion typesetting methods most commonly used were hand-set type, Linotypes, stereotype plates or electrotype plates, and eventually computer-generated printing plates.

The two components of the successful press operation are printing and typesetting. One without the other is useless. During the years from 1950 to 1970, particularly, innovation was fast-paced and revolutionary. To set an adequate framework for the technology experience of the participants in this study, a brief description of the technology available from the 1920s to the 1970s is warranted.

Printing technology is a remarkably technical, mechanical and complex subject. The ramifications of all that is

involved are mind-boggling except for those who are trained in this field. Because the technology can be complicated, here are some of the major technology innovations in printing followed by simple terms the technological processes mentioned in this study, which were compiled with the help of knowledgeable literary sources and the participants.

Major Printing Technology Prior to Computers.

Date	Technology / Innoation
1440	letterpress (use of raised type surface, until 1940)
1805	Hoe's two-cylinder press
1813	Koenig's flatbed press
1854	papier-mache stereotyping
1850s	platen presses
1851	(1897 improved) sheet-fed rotary press
1859	continuous feeding rotary press (Hoe)
1870s	primitive photoengraving
1876	sheet folder attachments to press (Hoe)
1880s	electrotypesetting (photographs)
1882	double-perfecting web press
1884	Xylonites (stereotypes of cheap plant fiber which could be used over and over again)
1886	Linotype
1889	reel-fed flat bed perfecting press
1890s	two-color and perfecting cylinder presses rotary presses
1900s	offset lithography used in a few dailies rotogravure

1901 Autoplate (automatic stereotype plate maker)

1902 asbestos stereotypes covered with plant glue

1911 rapid drying mat for stereotyping half-tones

1912 intaglio photoengraving (rotogravure; sunken rather than raised typed)

1913 cylinder press (automatic feeders)

1925 single lens Leica camera (35mm film); 1932 range-finder and additional lenses added

1929 Luminotype (a phototypesetting machine) Teletypesetter (TTS)

1935 Semagraph (typesetting machine with photoelectronic eye scanner)

1939 offset printing with photographic type four-color presses

1945 basic principles of xerography first set out

1946 Intertype Fotosetter (photocomposing machine)

1947 electronic photoengraving machine

1949 Photon-Lumitype (computerized electric photographic typesetter

1950s end of hot metal type setting; begin newspaper use of offset lithography, electronic typesetting, and in later years computerized typesetting

1954 Scan-a-graver (monotype filmsetter - high speed powderless etching device for typesetting)[66]

As you can from the list above, before 1900 the majority of the basic technology in printing had been invented or was being developed. The technology earlier developed but later

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[66] This information was compiled from: Baker, Displacement, 11-16; Clair, A Chronology of Printing, 180-187; Kubler, A New History of Stereotyping, 75, 88-89, 216; Moen, Newspaper Layout and Design, 5-6; Moran, A Penrose Anthology; Lee, The Daily Newspaper in America, 115-130; Moran, Printing Presses, 205-207; and Mott, American Journalism History, 808.

used in the newspaper industry was improved and adapted for the special needs of the newspaper. Not all newspapers adapted their operations to the most advanced technology available at the time. Economics and newspaper size were prominent factors in decision making about new technology.

The following technical terms are some of those used in the narrative accounts that follow this chapter.

Chase -- an iron or steel frame in which type matter is locked.

Electrotyping -- a process for making duplicate printing plates of type composition or engravings.

Form -- type matter, engravings, electrotypes or stereotypes locked into a chase ready to be printed from.

Linotype -- a composing machine whose product is a slug bearing on one of its surfaces, a cast of a line of matrices assembled by the operator so that a whole line of type is cast in a single unit.

Matrix -- any impression from which metal is molded and cast for relief printing. Type is cast from matrices of brass, hard copper or aluminum alloy.

Stereotype -- a printing plate made from type or engraving (or both) by taking an impression (matrix) in plaster or wood pulp and then filling this mold with type metal.

Rotary -- a printing press that prints from curved plates attached to a printing cylinder (sheet-fed or web-fed).

Stick -- a small adjustable metal tray used in setting type by hand.

Turtle -- the half-cylinder plate used on a rotary press: an imposing stone on rollers.[67]

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[67] The Volume Library. Nashville, TN: The Southwestern Company, 1974, pp. 150-153.

Printing Presses. Presses used early in this century were flatbed mechanisms. Type was formed using hot lead and matrices. The cooled lead type form was then locked down on a table (chase) and the press either was literally pressed upon it (in the case of small operations still using a screw-down mechanism) or used in a single-sheet or web-fed rotary press operation, to create the printed page. One could compare the mechanical engineering in the screw-down mechanism to the hand-held imprinting a notary uses to impress or emboss a seal, except in the case of a screw-down press, the result is more embossing than impressing.[68] The rotary press is a cylinder mechanism with a type form (stereotype, electrotype, etc.) wrapped around it that rotates as the paper sheets pass under it, creating an inked impression every time the cylinder rotates.

The need to improve technology was driven by the need to provide faster and more efficient presses. The technology slowly evolved from primarily human operated, mechanically-driven operations to mechanical human-assisted operations, then to electrically-assisted or computer-assisted operations. These changes moved the physically-oriented pressroom to the machine-oriented pressroom. Man had control over a more sophisticated machinery which required less human physical energy, but demanded more human mental energy. The evolution

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[68] This explanation and others are simplified for ease of reading, but in no way reflect the complexity of the engineering and mechanics of the operations.

of the machinery was geared to more productivity and less human toil for a better quality product.

In the 1920s the reel-fed (web-fed) perfecting press had been in use since 1889, when it was invented by Paul Cox and built by Duplex Printing Press Company in Battle Creek, Michigan. Another competitor to the Duplex was the Comet produced by Goss Printing Press Company of Chicago. The Duplex was considered perfect for small newspapers. It was a web-fed[69] machine that "had two flat beds, each of which could accommodate four-page 'formes,' one above the other, and two travelling cylinders ... which printed an eight-page newspaper... ."[70] This type of machine could use Linotype, stereotype or hand-cast type because its process utilized a flat bed printing mechanism. This type of press printed from 3,500 to 6,000 copies per hour of four- to eight-page newspapers.[71]

Typesetting. Before any printing could be done, the type had to be set. Hand-set type was common before the Linotype in began to be used in the early 1900s. Stereotyping was the method by which type was formed to use on the presses. One of

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[69] Web-fed means that a continuous roll of paper was used on which to print. It was printed and then cut at the end of the press operation into sections. Later folding mechanisms were added to the end of the press, which reduced physical labor.

[70] James Moran, Printing Presses. Berkeley, CA: University of California Press, 1973, p. 205.

[71] Ibid., p. 206.

the first stereotyping methods involved using papier-mache as a form in which the type could be molded. Used with a rotary press or flat-bed press, the papier-mache form was made from sheets of paper molded together with layers of clay and plaster between the layers of paper making a form that could be impressed. The form would then be beaten or roller pressed into a form of type and shaped to conform to the flatbed or rotary press.[72] The matrix was filled with hot lead and then allowed to cool before the type form was set and released for use on the press. The matrices were then saved to be recycled. All this work was done primarily by hand and assisted by machinery.

The Linotype machine took the place of the hand compositor's job function. Before this invention, type was set letter by letter in sticks and then latched into place in matrices on the chase from which type would be cast. "Operated by a keyboard similar to that of a typewriter, the [Linotype] machine released type matrices, assembled them into a line of type, automatically justified them and cast them in a 'slug' of lead, returning the matrices to the magazine for reuse."[73] The Linotype along with the web-fed press were in use several years prior to the 1920s, but were still in use into the 1950s when Mergenthaler upgraded his Linotype to include teletype

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[72] Ibid., p. 181.

[73] Jean Folkerts and Dwight L. Teeter, Jr., Voices of a Nation. New York: MacMillan Publishing Company, 1989, p. 243.

tape for matrix assembly, which in turn bypassed altogether the Linotype keyboard.[74] The perforated tape--similar in function to player-piano rolls or computer punch cards--was 'read' by the machine and translated into the text to be printed. It did not take the place of the Linotype, but was used as an auxiliary in type-casting AP and UPI wire stories, for instance.

Photography. Photography was mentioned by a few of the participants in relation to their work. Photography came to be a primary communication medium as opposed to just a technology in the early 1900s as the use of pictures became more and more an important of presenting the news. Photojournalism as a profession took shape between 1925 and 1935 as new technology and the awareness of its potential was recognized.[75] The kinds of photographic equipment used by professional photojournalists in the early years varied. The cameras used in the first half of the 20th century were described by the negative size plate or later film that the image was transferred to in taking a picture. These cameras were described in terms of 8 X 10, 4 X 5 or 35 mm, depending on the use. The larger cameras were first and were part of a retinue of other equipment needed. In 1935, for instance, a photographer could be seen carrying an 8 X 10, a tripod, plate

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[74] Frank Luther Mott, American Journalism A History: 1690-1960. New York: The MacMillan Company, 1962, p. 807.

[75] R. Smith Schunerman (ed.), Photographic Communication. New York: Hastings House, 1972, 35.

holders, lenses and 500-watt lamps (bulbs).[76] Others preferred a 4 X 5 Speedgraphic, Graflex or Rolleiflex because of its size and ease of used.[77] The Leica probably has more name recognition in the 20th century as a small still camera that at first used a short roll of 35mm motion picture film as negative material. It was lighter weight and could be carried easily in the hand. By 1925 the single lens Leica was available to the public. This began a new era in news photography. In 1932 a built-in range finder and interchangeable lenses with sufficient optical power were added to the Leica.[78]

Black and white film was the preferred film of the first half of the 20th century until color photographs became more popular in newspapers. Color printing was expensive, and not all newspapers had the capability of printing full color. Smaller newspapers in the 1990s still only use what is called 'spot' color (one color at a time for background or line drawing). Newspaper photoprocessing required dark room skills working with the chemicals necessary to transform a negative into a picture, and also skills in the photo-engraving process called a 'half-tone'. The complex half-tone process uses either copper or zinc as plate material, and acid to etch the

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[76] R. Smith Schuneman (ed.), Photographic Communication. New York: Hastings House, 1972, 159.

[77] Ibid., 166.

[78] Ibid., 40-41.

plate for use on the press.[79] Since the 1970s, computers have the capability to accomplish much of the photo-finishing work for printing, such as fine-tuning color for clarity, density and contrast.

Conversion to New Technology

New technology in the newspaper industry was not uniformly received and utilized as it came into existence. Utilization depended on newspaper size and equipment needs. As more expensive technology evolved, such as the offset and computerized type systems, the smaller newspapers switched to offset/computerized production before larger newspapers, primarily because of the cost of converting millions of dollars' worth of equipment, in some cases. Offset technology was in place in Tennessee roughly in the mid-1950s in smaller newspapers, while emerging in the early 1960s in the larger newspapers, according to the participants' experience in this study.

Offset technology revolutionized the industry, primarily because it used plate-making techniques that did not involve hot lead and increased speed significantly.

> The principle of offset printing is very simple. Instead of printing direct from the printing cylinder to the paper, as with letterpress work, another cylinder is interposed, covered with a yielding rubber blanket, which receives the inked impression of the printing cylinder. This impression is then transferred or *offset* to a third cylinder ... . As

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[79] The Volume Library, 148-49, 151.

> the three cylinders are geared to turn in unison, the offset press is capable of high speed.[80]

The offset technology continued into the 1970s and was prevalent in the 1980s. An important difference is in the computer-driven typesetting from the newsroom, where the writing, composing, layout functions are controlled. The compositor position no longer exists. The newsroom has become 'pre-press operations'. More will be discussed about this later.

Technological changes in the newsroom were not as dramatic or spectacular as in the production department until computers and pagination completely changed newsroom operations. Reporters, editors, and other news personnel used the manual typewriter to write their stories until the 1960s, when the electric typewriter was in greater use. In the 1970s the electric typewriter gave way to video display terminals linked to mainframe computers, precursors to desktop computers now in use. One or more wire machines in newsrooms at daily newspapers were noisy reminders of the daily urgency of news, until someone developed a cover to muffle the noise. The addition of the perforated news tapes provided by the wire services which could interface with the Linotype was one innovation that involved the news writing process. This eliminated the need to retype some stories. The story was typeset directly from the tape.

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[80] Ibid., p. 149.

This section in no way is a comprehensive description of the intricacies of the technology available, just the highlights. This should, however, set the stage for the introduction of the experiences and responses of newsworkers to technological change.

Range of Technology Observed and Experienced

Of the 37 participants, 12 worked primarily in some form of newspaper production, and 25 were involved in news/editorial, advertising, or overall newspaper management. Twenty of these present or retired non-production newsworkers have had some production experience during their newspaper careers. All had the opportunity to observe or to experience the technology changes of both production areas and newsroom at one time or another. The large dailies of Memphis, Nashville, Chattanooga, and Knoxville were represented, as well as mid-size dailies and weekly newspapers throughout the state.[81] The readership of these newspapers ranges from a few thousand to hundreds of thousands. Primarily, the small newspapers were first to change to offset printing because of its overall cost efficiency. The huge investment previously made by the large dailies in Linotypes and older style presses prevented them from converting to offset as soon as the smaller papers.

Conversion to offset technology began in the late '50s to mid-1960s and many did not convert until the late 1960s or

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[81] See Appendix B for all representatives.

early '70s. The majority of the production newsworkers experienced hot metal typesetting technology. The newsroom personnel experienced loud wire services, noisy editorial rooms, clackety typewriters and running from place to place to put together the newspaper. The response to technology generally was favorable, considering the idealistic outcome, a better newspaper.

> The greatest technological change we made during my 50 years in the newspaper business was the move to offset printing. It was clearer, photos reproduced better and presses were lighter with less noise. While computers helped in producing the newspaper in the newsroom and composing room, it was the reader who received the benefit of this change and the change was great to our customers. It was better to the pressroom from production and pre-press work, although news[print] waste was somewhat higher.[82]

For the smaller newspapers, the phenomenal change from hot to cold type and faster presses meant even more.

> Technological advances rescued the country newspaperman from a life of hot lead, smoke-filled rooms and the old Underwood typewriter ... during the 70s ... [when] we went from strike-on-image to phototypesetting, to computers....[83]

In the newsroom, a breakthrough came in the 1950s when Associated Press and United Press International began transmitting perforated tapes that would correspond with the tape used to run the Linotype. Grady Crenshaw relates this story:

> The tapes were fed into Linotype machines, activating the keys much in the manner of the old player pianos.

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[82] Tutt S. Bradford narrative.

[83] Richard Jones narrative.

> This was the first step toward the goal of eliminating manual key strokes in the production of newspapers. Later, locally produced copy was converted to perforated tapes and used in the same way as the wire tapes. To the newsroom, the tapes represented its first involvement, though indirect, in the typesetting operation.[84]

The old delivery method of wire service compared to the tapes is described by Tom Hodge:

> Prior to the teletypesetter, we had AP or UPI teletypes which provided all-cap copy on a wide sheet. It had to be edited, with caps underlined, then sent to the shop. With the advent of the teletypesetter, the machines produced a narrow copy, upper and lower case. At the same time, the shop was getting a punched tape, each story marked with holes with the letter and number of the story. If the editor chose a particular story, the shop would match the story's letter/number with the tape, and run that through the Linotype. But even so, the wireroom, which contained usually six teletype machines, was noisy with the sound of the machines, the bells which signaled bulletins, and so forth.[85]

The copy desk experience is worth mentioning here because that is where the stories were finalized and readied for production. Ruth Thompson, also a Navy veteran, described the "old" way in the newsroom:

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[84] Grady Crenshaw narrative. Mr. Crenshaw is a retired assistant managing editor of The Commercial Appeal (Memphis), and formerly a reporter and editor. In this quotation, Mr. Crenshaw is referring to the fact that typesetting tapes were coming into the newsroom with the wire service stories. These tapes were passed on to the teletypesetter to insert into the Linotype. The fact that the newsroom was involved brought them closer to the typesetting function that they eventually inherited with computer technology.

[85] Tom Hodge narrative. Mr. Hodge is editorial director of the Johnson City Press, and formerly held positions as sports staff writer, assistant sports writer, sports editor, telegraph editor, news editor, and executive editor.

> When I started on copy desk we sat at a round table with typewriters at each spot and a slot man sat in the middle. We edited copy by hand and typed or hand-wrote heads which went through slot man/woman for approval. It was time-consuming but thorough because each story was read twice. And there was a back-up team of proofreaders.[86]

And then when offset technology and computer composition evolved, she went on to say:

> I believe technology changed my work for better. I found it much easier to read and correct stories on screen and put headlines on them and measure type to fit specific holes. The machine could count a whole lot faster than I could![87]

Computerized typesetting shifted more production responsibilities to the newsroom, and although this technology resulted in a cleaner, crisper looking newspaper, it had its drawbacks. Dee Boaz related the down side of the technology shift:

> The technological changes have meant far greater workloads for newsrooms. Our desks--which used to be responsible for editing copy, writing heads and doing rough layouts, then work on the composing room floor as a page was made up--now must do precision layout. We scan photos, adjust color, make separations on the computer, develop and produce graphics and set type. ...
>
> But, I think newspapers generally, especially smaller ones, have suffered from this shifting of responsibilities. I concede that newsrooms control the information from gathering to production now. But, as we have had to become production-oriented, we've relinquished some of the emphasis on quality of writing and depth of reporting. We don't edit as closely on a computer. ... I don't know of an editor

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[86] Ruth Thompson narrative.

[87] Ibid.

anywhere who'll tell you it's easier or better to edit on a screen than on paper.[88]

The production area was responsible, prior to this responsibility shift to the newsroom, for the typesetting, composing, make-up and printing of the newspaper. Some of the composition and make-up chores may have been distributed slightly differently in the smaller newspapers because dual or triple duty in all aspects of the operation could be required. Although the production experience in technology seems more dramatic mechanically than the newsroom experience, the shift of responsibilities to the newsroom can be seen as equally significant. Production and pre-press operations, as they were later called, could be said to have experienced similar technological impact from the workers' points of view.

This study is not designed to outline the intricacies of complicated equipment used in the production of newspapers. However, the participants kindly have described the operation of some of the equipment they used in production of a newspaper in terms that even the novice can understand. Since most agreed that the hot metal typesetting was gladly relinquished to antiquity, the following descriptions lead to a better understanding of the reason. They also give a more graphic definition of terms.

[The Linotype] was a complicated mechanism invented by a German fellow who I heard later went crazy. I

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[88] Dee Boaz narrative. Ms. Boaz is editor of The Leaf-Chronicle (Clarksville), and formerly a reporter and city editor.

> understand why. You'd strike a key, a matrix would fall down from the magazine above, which ultimately formed a line of type--hence the name. Then a hot molten metal was forced into these cavities. A slight malfunction, called a "squirt" in the trade, would cause a hot stream of metal to erupt into the air. At that time, I would jump and run, fast.[89]

And after hearing of the injuries sustained by a "squirt," who would blame him?

In the 1950s, the Linotype was still very much alive. Earl Waters related what it was like in the Army and business using the Linotype.

> In the 1950s the die was already cast. The Army had used mobile reproduction units in Korea. And they had already begun to use offset printing, which would eventually doom letterpress and hot type. But hot type was still very much alive. The military used both. And I continued my love affair with the Linotype.
>
> In 1958, I was discharged from the Army and took my first regular job as a printer, as a Linotype operator ... Not much had changed in printing during the first half of the century. The Linotype, the heart and soul of printing technology, had become more complex. A Model 1 high-base machine was a simple one-magazine affair. In the 1950s, Model 8s, 14s and 31s were the standard. It was like setting a Model T Ford alongside a 1955 Ford Crown Victoria. But it was still cars compared to cars, and typesetting machines [compared to typesetting machines]. Not cars and airplanes, or typesetters and computers.[90]

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[89] Danny Jones narrative. Mr. Jones is editor of the Herald Gazette (Trenton), formerly printer's devil, Linotype operator, pressman, stereotyper, advertising sales, photographer, reporter, associate editor, and editor at the Milan Exchange, and editor of the Courier Chronicle in Humboldt, Tennessee.

[90] Earl Waters narrative. Mr. Waters is a copy editor, make-up editor and columnist for the Chattanooga Times, formerly printer, Linotype operator.

Mr. Waters also described what could be called a prototype of one of the first attempts to produce cold type.

> The basic piece of equipment in this process was the Linofilm unit, manufactured by Linotype's parent firm. It was a melange of vacuum tubes, relays, glass font negatives and decoders. The keyboard units were monsters of inefficiency that required much time and required a great deal of math to accomplish simple type alignment and variable sizes. But the end result was type on film and paper. In Neil Armstrong's words, "It was one small step..." The Linotype died a slow death. Other names pushed it aside. Linofilm, VIP, Comstar, Compugraphic... The cool breeze of air conditioning replaced the sweat-tainted air that was a byproduct of 20 or 30 Linotypes, each with a pot of lead heated to a temperature of between 535 and 550 degrees.[91]

There were simpler innovations that cannot go unnoticed. Remember the old folding Kodak camera and flash gun with bulbs that had to be popped out between flashes? When Dean Stone was a student at Oklahoma University working for Associated Press, he covered a story involving President Harry S Truman with just such a camera. This was his story about his encounter with photographic technology in a rather enlightening way.

> I saw him [Truman] and made some photographs on Norman's main street near the Norman terminal of the interurban to Oklahoma City as he spoke from the rear of an observation car on his campaign train. Later that day I, already a member of the professional journalism society Sigma Delta Chi, was selected as one of the students to be privileged to attend a press conference by Truman in Oklahoma City. When I arrived, the only seats available were on the front row so I took one, trying to be as inconspicuous as possible.

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[91] Ibid.

> Truman, Gov. Turner, and other dignitaries walked onto a stage about 18 inches above the floor of the small auditorium. The pros with the big 4 x 5 press cameras crowded up and got their shots. When they stepped back, I aimed and fired my folding Kodak camera with a big flash gun and bulb attached--but nothing happened. I turned the camera up toward my face to check the camera and flash unit from the front. Apparently there had been a short in the connection and the flash went off in my face.
>
> I was embarrassed beyond words and was just going to forget about it. Gov. Turner started to sit down but Truman, taking a drink from a glass of water, said, "No, wait a minute, this gentleman didn't get his picture." So burning my fingers, I removed the just-fired bulb, put a new one in and shot my picture.[92]

Technology may have failed, but in this case, human kindness prevailed.

Personal experiences give some insight into the mind-set of the newsworker and the reception of technology, good or bad. The next section takes the study one step further, the impact of technology on the people involved.

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[92] H. Dean Stone narrative. Mr. Stone is editor of the Maryville Daily Times. His newspaper career began in sports writing.

CHAPTER 5

TECHNOLOGY AND ITS PERCEIVED IMPACT

Newsworker Response to New Technology

What actually occurred during technological change that affected individual workers in all Tennessee newspapers would be impossible to track. An attempt has been made through compilation of narrative expression to illuminate some of the impact of technological change in the three major areas of the newspaper as previously defined: newsroom, production, and management. In the following paragraphs experiences are related that reflect both positive and negative effects of technological change.

Newsroom Response. In the newsroom, "electronic transmittal improved work flow."[93] Also, the wire machines were encased in glass or removed to glass-enclosed rooms, thereby muffling the clatter they made; carpet was installed in all areas; and the old manual typewriters were replaced with electric. The newspaper became a quieter place. However, "technological changes have meant far greater workloads."[94] Earlier it was hinted that new technology

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[93] Bob Atkins narrative.

[94] Dee Boaz narrative.

transferred the typesetting craft to the dominance of the newsroom. Reporting, editing copy and then passing it along to the compositor or typesetter was the original flow of operation. With new technology in the newsroom came the pre-press responsibilities by the 1980s, encompassing the duties of layout, design and typesetting.

Newsroom personnel felt that this shift had a negative effect. The eradication of the need for proofreaders with the advent of computers in the late 1970s caused some misgivings to those who had editorial responsibilities along those lines. Too much dependence on the modern equipment seemed to be developing, since there appeared no more need for a proofreader, whose duty it was to double-check grammar and syntax as well as word sense.

Production Response. Glover Williams pointed out the problems associated with new technology. "Technology increased the number of working hours by reducing the staff and increasing the amount of time [production managers] spent training."[95] Also, "newspaper production has shifted from qualified composing room personnel to the editorial staff. This has caused an increase in costs and a reduction in quality, not to mention an increase in stress levels for production workers."[96]

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[95] Glover Williams narrative. Mr. Williams is production manager of the News-Examiner (Gallatin), and formerly composing room foreman and hot metal compositor.

[96] Ibid.

There were positive aspects, however, that some felt outweighed the negatives. "All in all, the new technological changes in newspapers and printing have been for the better. No more 'hot' lead to deal with; no more heavy plates; much faster and larger papers now come off a new web-fed press completely folded in loose sections, with color available; and it reads easier."[97] The heavy tables, type chases and fumes from hot metal were gone with the introduction of cold type. It was no longer hot and stuffy, and loud in the pressroom.

From an economic standpoint, the benefits were enormous, according to Grady Crenshaw. The quicker production allowed deadlines to be moved forward, sometimes as much as 45 minutes. The graphics and other layout designs were readily available and art reproduction was improved dramatically. He commented also that the overall appearance was "greatly improved." The speed at which newspapers could be printed also allowed the larger plants to print other newspapers or jobs in the time that was saved from what it took to do the job when the old technology was used. Also, offset offered more photo capability at a fraction of the cost.[98]

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[97] Karl Barlow narrative. Mr. Barlow is former co-owner of the Dresden Enterprise and the McKenzie Banner and manager of commercial printing, Linotype operator and machinist, letterpress operator, offset operator.

[98] Danny Jones narrative. Mr. Jones is editor of the Herald Gazette (Trenton), formerly printer's devil, Linotype operator, pressman, stereotyper, advertising sales, photographer, reporter, associate editor, and editor at the Milan Exchange, and editor of the Courier Chronicle in Humbodt, Tennessee.

Changing from Linotype (or purchasing offset equipment after using a larger plant's printing facilities) meant in some cases that the editors of small newspapers had to learn photography-based production methods and then train employees. Retraining employees was a stressful event for newsroom and management supervisors. From the production standpoint, "The process of retraining the employees on new equipment [while] producing a daily paper on the old equipment often caused a great deal of stress."[99]

One frequent observation of co-workers in response to technology change was put into words by Fred Comer: "The biggest change in co-workers as new technology was introduced was concern for job security."[100] But an opposite response was, "The workers approached new technology as eagerly as did I because almost all recognized that our printing and publishing methods were antiquated."[101] Throughout the narratives there is this "yes and no" observation to co-workers' reactions to new technology. Yes, it was a good thing, but no, I did not want to lose my job, or I am not sure of this change. Some back shop employees thought of technology as a dirty word. Karl Barlow admitted that "change

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[99] Buddy Jones narrative.

[100] Fred Comer is a retired typesetter, make-up man, and apprentice in the composing room of the Knoxville Journal.

[101] Tutt Bradford narrative.

was not what we wanted--we liked the old way better."[102] Of course once the technology was learned, the attitude changed in many cases.

Fear of change, fear of loss of job, hanging on to the old way of doing things. These were all the negative feelings expressed by the participants in describing how it was. One significantly understated factor was pride in craftsmanship, although it is there in their resistance to change to new ways. "In the physical sense, the older printers adapted well; but they were not happy workers. There was resentment over the abandonment of their hard-earned skills; their forced shepherding of the trainees, what they regarded as the newsroom's takeover of the typesetting function."[103] Their craftsmanship was threatened. It was almost as though, if they had been medical doctors, someone was saying that they now had to give way to the nurses. Same field, but a demotion. After all, the women who could type were being brought in to run the typesetting equipment which had been run by men during the good ole hot type days. The ego and the pocketbook was taking a severe beating in apprehension of what would be or might be.

The positive reflections were as enlightening as the negatives. "Every individual reacted differently. Some dreaded the chore of learning a new skill, while others looked

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[102] Karl Barlow narrative.

[103] Grady Crenshaw narrative.

upon it as an exciting challenge."[104] This, simply put, explains the diversity of reaction. Some reacted more violently than others, figuratively speaking. In reaction to technology in general, "some always have to be dragged kicking and screaming into making changes or learning new processes, and their minds are closed to innovations."[105]

Management Response. From a management standpoint, new technology allowed Fred Drewry to spend more time with his principal supervisory duties in the newsroom, rather than having to spend so much time in the back shop being concerned with production.[106] While some dreaded the chore of learning new skills, others looked upon change as an "exciting challenge."[107]

Age made a difference in the receptivity to change. Older printers were highly disturbed. They thought it meant the end of their jobs as compositors and Linotype operators. Walter Pulliam tells of a Linotype operator who refused re-training when his newspaper switched to computerization. He said he was "trained as a Linotype operator and would do nothing else." A few years later this same man was unemployed. With the well-being of his employees in mind, John Seigenthaler said he sought the advice of a professional to help him

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[104] Buddy Jones narrative.

[105] Ruth Thompson narrative.

[106] Fred Drewry narrative.

[107] Buddy Jones narrative.

determine the impact of new technology on the employees before installation of computer terminals in the newsroom. This was particularly helpful to older employees in adjusting to new equipment and procedures.[108]

From the production and management sides of the newspaper came the observation that except in the larger plants, the fear of loss of jobs to technology was an ill-founded concern. On the production side, one report was that all learned new skills and adjusted to the new methods more quickly than anticipated. However, "many compositors and typesetters at the larger plants were forced into early retirement."[109] There were new options, some good and some bad, but there were options. The following was not an uncommon observation. "With the phase-out of the Linotype, make-up 'stones' and other male-dominated areas, all of our employees were given opportunity to change to paste-up or keyboard operating, or process camera work. Some chose to move to other larger newspapers where they could continue in their familiar duties. Others adapted to new opportunities."[110]

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[108] John Seigenthaler narrative. Mr. Seigenthaler is the retired chief executive officer of the Tennessean (Nashville), which was formerly owned by the Seigenthaler family.

[109] James Murray narrative.

[110] Jimmy Williams is production manager for the Paris Post-Intelligencer, and formerly small job press operator, Linotype operator and Linotype machinist.

Union Response to New Technology

Of the 34 participants in this study, six were involved in trade unions (I.T.U and I.P.P.A.U.) at some point in their careers. As production workers were promoted to management, they were considered ineligible for participation in union activities. One participant was a member of the Newspaper Guild, which represented newsworkers in the news/editorial side of the newspaper business. There was little discussion of this professional union in regard to technological change because there was so little to be discussed until computerization fully invaded the newsroom; that occurred after the time period of this study.

Production participants who said they had been union members were involved with the I.P.P.A.U. and the I.T.U. Some of these had progressed to management after many years working in the back shop. Generally, the consensus of these participants on union reaction to technological change was that trade unions were reluctant to accept new technology if it meant loss of jobs. The trade unions were "open as long as they retained jurisdiction over the work."[111] It was plain that control was a factor in union cooperation in technological change. "The Union's [I.T.U.] response to technological change was that the Union maintained jurisdiction over work performed in the composing room and its members would be trained to man the new processes in a

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[111] Earl Waters narrative.

competent manner."[112] Tom Hodge, Editorial Director of the Johnson City Press told about when the I.T.U. struck his paper. They wanted to have control over the new offset system in his paper as well as the women typists who input stories to produce the tape that would run the Linotypes automatically.[113] Wendell Melvin, retired production manager and former member of I.T.U., corroborated this phenomenon when he related that "they [the Union] were opposed to changes of any kind and especially new technology. The Union wanted status quo. They fought the change, wanting to keep their manning clauses." It was more important to keep jobs as to numbers rather than job protection by name. Melvin explained that the union members were offered protection by name (i.e., a job somewhere in the operation), but the members refused. Earl Waters sums it up for the Typesetters Union most concisely: "Some were apprehensive. Some resisted change. But most endorsed the philosophy of the international [I.T.U.], which paraphrased was: "We don't care how you do it ... as long as we are the ones doing it."[114]

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[112] Fred Comer narrative. A Ludlow was a companion machine to the Linotype. It was used to set headline and advertising type larger than 24 points (1/3 inch), which was the maximum that the Linotype could handle. It used hot metal like the Linotype. When the hot lead was compressed into the type form, some might spew out causing burns.

[113] Tom Hodge narrative.

[114] O. Wendell Melvin, Jr. narrative. Mr. Melvin is retired operations manager of production, Newspaper Printing Corporation for the Tennessean and Nashville Banner, formerly apprentice and journeyman printer, head of make-up, composing

The large daily newspaper operations in Tennessee have had the most union activity. Although most of the participants in this study literally have had their hands in almost all phases of operation, the majority were not involved in union activity, because of the low number of large daily newspapers, the open-shop laws, and the large number of non-dailies in Tennessee who historically have been considered too small to organize. There was allusion to the "right to work"[115] in Tennessee and that union and non-union workers alike had a work ethic which superseded affiliation, i.e., workers were happy to learn and switch to new processes. There was also some blunt denunciation of union reaction. Glover Williams' experience as production manager was that the Union was "strictly against" technology change. "They wanted complete control of all changes."[116]

From his newspaper management perspective, Walter Pulliam echoed this sentiment. "Unions traditionally have opposed changes, even when workers benefit."[117] According to these participants, there have been more failures in attempts to

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room foreman, and assistant production manager.

[115] 'Right to work' is a term used to describe the Tennessee law that allows persons to work in union shops without being part of the union. It further forbids unions to arbitrate contracts that explicitly exclude non-union employees, i.e. or 'close the shop'. Tenn. Code Ann. 50-1-201, 202. This law was enacted in 1947.

[116] Glover Williams narrative.

[117] Walter Pulliam narrative.

organize or to maintain a strike against small operations than successful labor attempts to organize Tennessee newspapers.

The threat of displacement--either by obsolescence or replacement with unskilled workers--was one of the fears of union workers. Some said that these fears were groundless. If a newsworker was willing to retrain, there was generally a job, except in the larger plants. Not unlike the findings in the literature review, the displaced workers could find jobs in the smaller operations which were changing over to offset, if they were willing to transfer their skills to the new technology.

The weekly or smaller daily newspapers encountered little union activity because they said the work force was so few in number and there was little motivation for the newsworkers to organize. From a newspaper management viewpoint, Tutt Bradford related that he has experienced several attempts by unions to organize; however, the employees were well paid and treated fairly, he said, so they had no incentive to join.

Physical Impact of Technology

Impact on Production. One of the most beneficial contrasts found in this study with the change from hot type to cold type was the reduction of on-the-job injuries on the production side. Workmen's compensation liability was reduced drastically for the employer, and the health and safety improved for the employees. The responses to questions in this study about the physical impact of technology on the

newsworker revealed everything from "no problems" to major injuries. The size of the operation, the type of equipment used, the working conditions, and the attitude of the individual all affected the response. Some of the participants personally have suffered from injuries or conditions such as hearing loss, stress, ulcer, and hypertension. Other illnesses are listed, but no connection has been drawn between the working conditions and the disease. However, the newsworkers in this study observed much more than this.

"Some accidents were finger loss from saws, burns from hot metal 'squirts', an eye loss due to a Ludlow 'squirt', and an allergy from the first photo-polymer used in the Letterflex plate system."[118]

"Some backshop employees were diagnosed with chronic bronchitis, which was aggravated by fumes from leadpots."[119]

"The thing that was probably dangerous to our health was breathing the smoke from the melting pot where we melted type metal and poured pigs[120] for the Linotype machines." Also, "when a heating unit burned out on a Linotype machine, we had to replace it. The units were packed in asbestos. The asbestos was powdered and we added water to make it into a

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[118] O. Wendell Melvin, Jr. narrative.

[119] James Murray narrative.

[120] The word 'pigs' describes the uniform blocks of lead to be melted and used for typesetting.

paste to re-pack the unit. Asbestos would be all in the air and we would breathe it."[121]

"I saw a stereotyper's feet immersed in spilled molten lead and another whose hand was lost to a type-metal saw."[122]

"As far as I know, there were no illnesses caused from working with lead and other components of the material we used. We never had anyone hurt by lifting or moving the heavy lead castings."[123]

The last quote is probably an exception to the rule.

Impact on Newsroom. Newsroom personnel reported that the down side to the advent of cold type was the gradual shifting of typesetting and composing responsibilities from production to the newsroom. This caused more stress, generally, in long working hours and training, and more particularly on the eyes as video display terminal screens became more common. There were a few reported instances of carpal tunnel stress caused by continual keyboard use. The stress of learning new skills as automation hit the newsroom was also a factor cited in problems with heart ailments, hypertension and ulcers.

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[121] Glenn H. Orr is foreman of composing room and maintenance, Maryville Daily Times. (Mr. Orr did not know of any problems which resulted from this.)

[122] Walter Pulliam narrative.

[123] Tutt Bradford narrative.

Conclusion

Technology overall improved the physical working conditions of the production side of the newspaper industry. With the advent of cold type, the work place became a quieter, safer and cooler place to work. The participants agreed generally that offset printing and computerized typesetting revolutionized working conditions in the newspaper industry. The newsroom staff had now become 'pre-press' and had a quieter environment in which to work. The long hours that production staffs used to work, however, had been shifted to the newsroom in some respects because they inherited page make-up responsibilities that had once been the domain of production.[124] The new technology allowed the newsroom to produce copy ready to be printed, thus eliminating the now obsolete typesetting and composing areas. This shift in responsibility created a mentally stressful environment in the newsroom that replaced the physically and mentally stressful environment of the typesetting and composing rooms.

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[124] If newsroom staffs were enlarged to meet the demands of new technology, participants in this study did not specifically mention it. There was mention of increased workloads, however. This omission of any staff enlargement practice might be due to the time period studied, which ended at the transition to computers in the newsroom.

CHAPTER 6

COMPARISON OF DAILY AND NON-DAILY TECHNOLOGICAL PERSPECTIVES

Technological experiences across the board had shared commonalities in this study, which will be discussed later. However, to gain a better understanding of whether there were commonalities or differences from region to region regarding the impact of technology on Tennessee newsworkers, more analysis had to be made. This information is important to students of Tennessee history as well as those interested in sectionalism that crystallized during the Civil War. In this chapter, comparisons of perspectives are made between daily and non-daily newspapers and among regions, where appropriate.

Reaction to Technology

A job, a livelihood, a way of life, all characterize the way one might feel about an employment experience, particularly if it is seen as life-long. In this study, the way newsworkers felt about their jobs was reflected directly in the way they responded to technological change. Comparisons of all newspapers represented in this study regarding response to technology revealed that participants from the Eastern Region as a whole, and the Eastern non-daily

papers particularly, might be more likely to have positive feelings about and reception to technological change.

There are many factors that could be the foundation for this phenomenon. Tennessee has been characterized by natives and historians as consisting of three grand divisions ever since the Civil War.[125] The political and personal philosophies that developed during this confrontation solidified the reputation. Economic issues, particularly internal improvements set East Tennessee against West and Middle Tennessee.[126] Slavery was another issue that divided East Tennessee from the other grand divisions. "Slavery was neither widespread nor strong" in the East while it was just the opposite in the West and Middle sections.[127] Political division was probably the most dominant divisive issue among the sections. East Tennessee wished to remain with the Union, while the other sections wanted to secede from the Union. East Tennessee would have been satisfied to become a separate state. Their bitterness was evident in the reaction of the

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[125] The geographic division line for West Tennessee is the Mississippi River on the west and the Tennessee River as it dissects the state. East Tennessee lies between the Eastern Time Zone line and eastern Tennessee state line. Middle Tennessee is everything between these two regions within the state.

[126] Mary E. R. Campbell, Attitudes of Tennesseans Toward the Union. New York: Vantage Press, 1961, p. 35.

[127] Ibid.

other two sections. They felt that they were a minority without recourse.[128]

The development of organized labor was strong in Memphis among farmers after the Civil War. In the late 1870s, the Farmers' and Laborers' Union was formed. This formation was heady in that for the first time in a long while those organized farm workers felt they had voting power.[129] This information on the sectionalism of Tennessee might explain the regional differences in reception to change, especially technology. East Tennessee has a regional reputation as a conservative area; West Tennessee is considered a more liberal area; and Middle Tennessee does not really fall into a definite category, but is considered transitional. The national election results bear this out. Whether conservatism is equated with a pragmatic, more get-it-done approach to technology is up for debate. Whether the liberal politics of the West would attract more union involvement and, therefore, more resentment for job displacement caused by technology, raises questions. Also, where there is a mix of ideologies, there should be a mix of response. Of the three divisions, this is most evident in the mixed reactions of Middle Tennesseans to change. Based on this information, there is a *possibility* that a link exists between individual political

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[128] Ibid., 201.

[129] Cartter Patten, A Tennessee Chronicle. Chattanooga: (no publisher cited), 1953, 242.

and ideological philosophies and perception of change in certain circumstances, including technology.

How did the regions compare in response to technology? A geographic comparison of observed responses from newsworkers in daily and non-daily newspapers revealed that reaction ranged from 'eager to learn', to 'resentment', indicating some very personal emotions. The Western Region participants observed generally reluctance and resentment or a mixed reaction. The Middle Region participants observed fear of job loss and a mixed reaction.[130] The Eastern Region participants observed more eagerness to learn or a mixed reaction to technological change.

When the responses are compared on a non-daily and daily newspaper basis, the daily paper participants observed employees who were more afraid for their jobs, and who were wary of or resented change more than they were eager to learn or had mixed reactions. The non-daily participants saw more eagerness to learn and be challenged than fear of job loss or change.

A common perception of technological change prevalent in from respondents in all regions and in all papers represented was that offset technology and the accompanying computer-generated type were the greatest technological changes

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[130] For purposes of this study, a definition of mixed reaction is derived from a study of the narrative responses as acknowledging the need for the technology but reserving judgment because of perceived problems.

observed. There were some characteristic differences that are worth mentioning here. The Linotype was cited because it improved the work situation. If one thinks of the concept of not having to meticulously place type letter by letter on a stick ever again, the point is well taken. The other characteristic difference cited in the study was Linofilm. The reason stated for this is that Linofilm was an 'in-between' stage for typesetting when comparing the Linotype to electroplate stereotyping. It was technology "with one foot in yesterday and the other in tomorrow. It enabled the industry to make the transition."[131] Other participants expressed similar analogies of having one foot in the old craftsmanship and the other in space-age technology.

Effect of Job Loss and Retraining

Newsworkers either quit, retired early or retrained when machine technology replaced functions of workers, according to the participants in this study. The daily newspaper representation reveals that early retirement was a primary effect on the work force. Non-daily newspaper representation was that workers quit/changed jobs as a primary response to this type of change. Other manifestations mentioned were unstable work force, retraining, and reduced staffs. The displacement of males by females was an interesting mention from participants in daily and non-daily newspapers.

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[131] Earl Waters narrative.

By region the Eastern Region participants revealed retraining and early retirement/attrition as predominant effects. The Western Region participants indicated retraining and quitting as primary effects. The Middle Region participants thought staff reduction was a dominant factor in displacement. The displacement of males by females was mentioned from the Eastern Region and the Western Region. All of these regions, showed a displacement of one sort or the other, usually forced reduction of staff or retirement. While retraining is mentioned specifically in the Eastern and Western Region responses, it was an option open only in certain circumstances. The smaller newspapers might have been able to retrain or reorganize staff to accommodate displaced workers as technology dictated. The larger plants, because of substantial investment in property, plant and equipment, more than likely did not have the economic ability to reorganize and salvage workers displaced by technology.

Union Organization

The majority of the participants stated that their newspapers were not organized by unions. The union strongholds have traditionally been in the larger plants, which are in metropolitan areas. Memphis, Nashville, Chattanooga, and Knoxville daily papers, for instance, are where the majority of the strong union organizations have been. It would not be enlightening to compare regions by union activity, because there is not enough information available to make comparisons.

It is sufficient to say, however, that unions have played a large part in the acceptance or rejection of new technology where they were organized. The larger plants, as mentioned above, were hit hardest by technological change because of displacement, which the unions fought hard to stop.

Technology and Women

Other than displacement, women were not mentioned often in the responses to this study. James Murray in the Middle Region compared the old-fashioned typesetting routine with handing over the responsibility of new technology to a teenage girl with a pair of scissors and a waxer who could "produce more type in an hour than a master printer could produce in four hours with hot metal type." Any other mention of women came from the Eastern Region dailies. Tom Hodge related an instance with women and early days with the Union before it left. "The Union wanted to have control over the tele-typesetting equipment and the women typists who input stories--typists cost less than I.T.U. members. The I.T.U. obviously could see the threat posed by teletypesetting. You could take a girl who could type and she could handle the teletypesetter--at minimum wage, compared to the Union's far higher rates."

Another instance, this time within the newsroom, was the treatment of a woman editor who trained young men as they began their careers only to have the young men promoted, while she was passed over twice. Also, she says she might have joined the Guild if the men in the newsroom had not been so

rude. There is also the possibility of a connection between Guild membership and promotion. However, the implication was that the potential for job discrimination against women in male-dominated businesses is a fact of life, then and now.

Any comparisons of women newsworkers in the newspaper industry between daily and non-daily newspapers and by region would be impossible with as little data as is available in this study.

On-the-job Illness, Injury and Accidents

The incidence of reported illness, disease, and injury generally fell into three major categories: lead-related, stress-related and equipment-related. Other problems were eyestrain, allergy, breathing asbestos dust, headache and hearing loss and cataracts. Lead-related problems included non-specific lung disease including chronic bronchitis, lead fumes, burns, and impact injuries. The stress-related illnesses included heart disease and arrhythmia, hypertension, nervous breakdown, and ulcers. Equipment-related injuries were loss of eye, arm, foot or fingers, broken bones, and back injury.

No doubt lead-related disease and injuries were common knowledge to the majority of participants, if not personal observation and experience. Those whose careers began after the change from hot lead to cold type obviously had no such recollection. The eye and hand strain working on VDTs would probably be more their complaints, if reported at all.

Although asbestos was used to pack some equipment in the production area, as noted previously, only one person cited it as a potential problem with disease. Asbestos poisoning as a threat to health came to light in the 1970s and 1980s, and therefore, would not have been considered a threat earlier, but on reflection could cause concern.

A comparison of disease, illness and accident reported by participants from dailies and non-dailies showed that lead-related injuries/disease and stress were significant. The difference was that the daily newspaper compilation showed stress as more prevalent and lead as second. The non-dailies compilation showed just the opposite. This could be unusual in that smaller newspapers may have people doing double duty to get the paper out, which could be a stressful situation. However, not producing a paper every day would negate that effect. It would be consistent, however, that employees of larger newspapers with daily deadlines would be under greater stress.

A regional comparison of newspapers in this study told a slightly different story. While the east and central parts of the state were consistent in citing lead as primary in disease, illness and injury, the west placed stress as a concern ahead of problems with lead.

A fascinating side note was that no participant in this study specifically mentioned tuberculosis by name nor mentioned the Pressmen's Home.

CHAPTER 7

TENNESSEE AND NATIONAL EXPERIENCE COMPARED

Tennessee has been known historically as the Volunteer State, populated with aggressive individuals sparked by a desire to do the right thing. Each state's populace in the United States has some sort of reputation, and this volunteerism is the reputation that has stuck in Tennessee. Some of the characteristics expressed by the people in this study--individualism, pragmatism, dedication to hard work, love for what they do--all epitomize ideals to which many Tennesseans may aspire.

There has probably never been a characterization of the nation as a whole in these terms, so to compare on these terms would be fruitless. The literature review, however, sets out some national perspectives about the printing and newspaper industries which can be compared to the Tennessee experience to either validate common experiences or raise questions about differences.

Technology

The technological changes depicted in the literature review and the narratives are parallel in mechanical nature

and function.[132] The main difference is the greater detail in the day-to-day operation and insight of first-hand observations that supersede the information provided in textbooks and histories. For instance, it would be highly unusual for such candid remarks to be made in textbooks about reactions to technology. The mixed review--reluctance and challenge--is not always reflected in the historical writings. In Tennessee, there was a greater willingness to change than is generally portrayed in historical accounts of the press.[133]

The trade union perspective of resistance to change, as recounted from observation, participation and literature,[134] is reflected in the narratives; however, the union re-training suggested in the literature[135] is not mentioned as much in the narratives. The reason for this may be the open-shop status of Tennessee. The training may have come from a newspaper or unions, depending on the size and disposition of the newspaper, so therefore is not mentioned as a predominant factor.

One other factor that is not mentioned to a great extent in the literature is the relief of the production staff when hot lead was replaced with cold type, compared to the chagrin of the newsroom staff to take over what was production

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[132] Op. cit., notes 65-78.

[133] Carlton, 19.

[134] Carlton, 126.

[135] The Journal and Tribune, A-1, col. 3.

responsibilities in typesetting. The impact of this important shift in job responsibilities has not been documented to a great extent in college textbooks as to the mental stress created. Technology was and is a great thing. There just has not been a reality check in dealing with the human beings who had and have to accept change.

Forced Displacement

The participants in this study said that forced displacement was not quite as problematic as it may have seemed on the surface. Although the large papers reduced their staffs and trained those left to work the new equipment, the smaller papers shifted people around and retrained them. Displacement was far more an urban problem in the newspaper industry than in the rest of the state because of the situation of large newspaper operations. The numbers of daily newspapers in Tennessee have fluctuated throughout this time period studied. The larger plants had more employees; however, they were outnumbered substantially by numbers of small newspapers across the state. The ratio of dailies to non-dailies was 1:12 in the 1920s and were reduced to a ratio of 1:5 by the 1970s.[136] If the non-dailies were predominantly non-union because of size, as this study indicates, it would stand to reason that their size and ability to reorganize would allow them to avoid as much displacement as possible. As a result, Tennessee would not fit a pattern of vast

[136] See Appendix G for Tennessee newspaper statistics.

displacement, as in states where the newspapers as a whole might be more union-dominated. Union affiliation and state laws would factor in the overall picture and produce more of an effect of displacement nationally.

Organized Labor in an Open-shop State

Unions have not been strong overall in Tennessee because of the state's open-shop labor status, the rugged individualism of Tennesseans, newsworker dedication to get the job done as a priority over affiliation and the notably different political philosophies of the geographical regions. Labor unions exist primarily in the larger cities in the daily newspapers. The unions have merged with other unions over the years, except for The Newspaper Guild, to form stronger bonds. The Graphics Communications Union, which includes the production area newsworkers, does not have newspaper locals on its membership roster in Tennessee at the time of this study. According to Charles Price, who is responsible for national membership rosters for the Union, there are only commercial print shop locals in Tennessee. He was not able to state whether members of the Graphics union prior to merger (such as I.T.U. and I.P.P.A.U.) had organized locals in the newspaper industry from the 1920s to the 1970s. The records were not available for inspection because of the many mergers. There is probably evidence somewhere, but it is not available for this study. Today, if a Tennessee pressman wishes to be a

part of a trade union, the commercial print shop local is the only option available.

So much changed during this time period with unions that it is difficult to pin down specific comparisons. The participants in the study provided information that roughly parallels the literature on the trade union attitudes, the level of activity in larger plants, and the attitudes of trade union workers to change. There were no surprises in any information presented.

The Use of Women and Technology Change

The literature deals with women as (1) sweating and toiling to take the place of men during war-time; (2) being tough-minded and not willing to stop working after the war effort; and (3) displacing men as technology changed because they were cheaper labor. The narratives painted a similar picture, yet a little more graphically. The fact that women were exploited is obvious from both sources. The admission that they were exploited may be harder to find. The newspaper industry was and is a male-dominated industry, and the perspective on use of women was perceived as a business-related decision in the literature[137] and confirmed in the narratives. Women were cited by some as doing a better job and were cheap labor--no insult intended.

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[137] Groat, 153-160.

Overall, the narratives on women in the newspaper industry during the time period studied are on target with the literature, no matter how disgusting it may be to some of us.

Industrial Disease

The literature review on disease and other occupational injury related to technology mentioned lung-related diseases, particularly tuberculosis.[138] Participants in this study mentioned only non-specific lung disease and chronic bronchitis. One graphic illustration was given to direct exposure to asbestos dust, which until the last few decades was not known to be a health problem. This was related in retrospective, since learning of the hazards of exposure. The statistics in the literature review[139] noted heart disease related to the printing industry. Participants in the study discussed hypertension, arrhythmia related to stress, and heart disease. Since the statistics generally dealt with death rather than illness, it is not possible to draw a correlation between illness and the environment of the pressroom except by the eyewitness accounts, and accounts of specifically diagnosed illness. Most participants who discussed the positive change in technology from hot lead to cold type cited the relief from the hazard of smoke-filled pressroom areas. What is known today about the disease and/or

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[138] Shryock and Welch, 33.

[139] U.S. Bureau of Labor, Monthly Labor Review. Washington, D.C.: U.S. Government Printing Office,Vol. 15, No. 5 (1922), 180.

discomfort from environmental particles in the air in hindsight elicited more response about dangers in using hot lead than might have been elicited from newsworkers during the time the hot lead was used.

Lead-related disease, burns and injuries led the list for most of the participants in this study who commented on this subject. When hot lead was phased out, the participants who began work after the change cited problems with constant VDT use in eyestrain and arm and hand strain from working the keyboard for long periods of time.

Stress, physical and mental, was prevalent in the hot lead era in the pressroom, but was reduced when hot lead was replaced. In the cold type era, production responsibilities in typesetting, layout and design were shifted technologically to the newsroom personnel on top of usual newsroom responsibilities. This phenomenon was not mentioned in the literature reviewed for this study. The shift in responsibility was brought to light in the narratives of the newsroom personnel who were the most affected by it. Since traditional historical viewpoint does not necessarily address the human response to change, this would not necessarily have been discussed.

CHAPTER 8

CONCLUSION

The purpose of this study was to seek to understand the mind-set(s) of Tennessee newsworkers when faced with new technology amid other national changes. Comparisons were made so as to understand the commonalities and differences across all newsworkers, among regions of Tennessee and between Tennessee and the nation. These comparisons do not make any claim to generalization to any population, just to patterns of behavior that were and can be compared to other historical phenomena and corroborative data. Many questions remain unanswered and are for others to pursue.

Developing theory and Considerations for Further research

This study reaches conclusions that could lead to developing theory in the area of human response to change. To render valid any conclusions drawn in this study, additional studies would need to be conducted across the United States to gather an even broader base of understanding from which theory could be generated. This study merely begins the process. The commonalities of the whole are in some ways contradicted by the commonalities of the regions. This seems to be a dilemma, unless and until other studies are conducted along

these lines which would either corroborate or dispute the findings.

Although this study may not be considered by some as drawn from a sufficiently large enough sample, the 37 participants multiplied by 50 states (1,850) would be more than enough for a qualitative study to parallel the numbers that national newspaper polls and other researchers cit for a statistical sampling of the United States (1,001). To take a sampling of at least this many people by state as have been gathered for this study would generate more information on which theory could be built based in a comparison study.

Was the research question answered? "What were the nature, manifestations and commonalities of technological impact on newsworkers in Tennessee from the 1920s to the 1970s?" The following synopsis outlines the answer to this question.

Nature of Technological Impact

The nature of the technological impact on newsworkers in Tennessee during the time period of this study included physical, mental and emotional factors. The physical factors on production workers included exposure to hot, smoky, unhealthy, and dangerous working conditions within the context of hot metal used to set type. These working conditions were exchanged for cool, relatively clean offset printing and computerized type environments. The mental factors in technological change included trading traditionally physical

labor for more mental stress in the pressroom as more complicated equipment was installed. The newsroom experienced more mental stress in coping with additional typesetting and make-up chores inherited from the evolution of computerization in their work place. The elimination of typesetters and copy make-up personnel was a direct result of computer technology innovation in the newsroom.

Probably the most important emotional factor for production workers was coping with the threat of job loss, fear of new equipment to learn, and indecision about the future of the craft. The emotional factors in the newsroom took on more subtle overtones. Resentment over additional responsibilities, which may or may not have been overt, and stress from isolation at the computer station, combined to undermine the morale of newsroom personnel as new technology emerged.

Manifestations of Reaction to Change

The manifestations of technological impact can be defined as participants' observations and experiences during technological change. Even though the advent of technology brought fear and concern, many of these participants personally experienced excitement and challenge in the wake of new technology. However, the initial manifestations observed were less encouraging and more up-front and personal: staff reductions in larger newspapers; cross-training in smaller newspapers; early retirements; union pressure to save jobs;

and replacement of men with women. Depending on the size and type of newspaper, the manifestations could have been devastating, where staffs in the production area were reduced with limited possibility for those laid off to be cross-trained and re-integrated into the newspaper. Or, conversely, smaller newspaper owners would not blink an eye and keep right on going as if nothing happened, except there was something new to learn to produce a better quality paper. Perspective is key to understand how impact was manifested. One would expect the bottom line to be the most important; however, the sentiment expressed by these participants was on the whole more altruistic than that. There were expressions of quality of product as much or more than economics, even by publishers and operations managers.[140]

Comparing kinds and sizes of papers under this subject heading in some cases was like comparing apples to oranges. But the circumstances under which technology changed played a significant part in how the technology was received. For example, the offset technology came first to the smaller newspapers because it was feasible to replace one or two machines with the more expensive equipment when the circulation could be improved or the newspaper expanded to print more than once a week. The new machinery could pay for itself. However, in the larger plants the expensive equipment

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[140] See Bradford, 53, n. 80; McCoy, 38-39, n. 64; and Drewry, 37, n. 63, for example.

needed to replace many machines was not economically feasible when the technology first came out. For this reason the larger papers were last to re-tool for new technology. Consequently, the manifestations of technological change were not simultaneous, nor received within the same working conditions from one size newspaper to another. Therefore, comparisons can only be drawn when size and kind of newspaper are compared. This study does not encompass such a comparison.

Overall, Tennesseans responded to technology well. The personal experiences in the narratives reflected a more positive response than the observations of other workers' experiences. In other words, the participants may have had a more positive attitude in some respects that what they necessarily observed among their co-workers. Many of these people worked their way up through the ranks to management and had a broader perspective possibly than the co-workers or subordinates with whom they worked. After all was said and done, technology played such a part in the lives of the newsworkers of Tennessee that it was either accept and adapt to it, or find something else. The participants opted for the former rather than the latter. The harsh term of hostility used to describe human reaction to technological change in the literature probably may not be appropriate in this study.[141]

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[141] Carlton, 126.

The closest reaction to that in this study was one mention of an observation of resentment.

A pattern emerged from the narratives in this study around the term 'isolation'. The literature used isolation to describe the worker in industry before mechanization who did the job, interfaced with only the supervisor and did not participate in a team effort. The next step was teamwork brought on by mechanization in industry.[142] When compared to the newspaper industry, the parallels are there. The typesetting craftsmen performed their highly-skilled work and then passed it on to the pressman to complete the printing job. This was somewhat isolated, even though the passing on of the work was a form of teamwork. The news technology in the pressroom required some more teamwork in coordinating the electronic functions of the machinery as new technology emerged. The typesetting eventually moved from pressroom to newsroom computers.

What is illuminating about technology in the newsroom is that news/editorial people in this study talked about the change from the old way to the new computerized way as changing from a people-oriented, team effort--running from place to place to get things done--to an isolated computer work station, where all the job is generated from that point. The isolation effect has come full circle in automation, except in a different part of the newspaper. The

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[142] Shultz and Baldwin, 19.

craftsmanship thought lost when computerized machinery took over the pressroom was not the only craft lost, apparently. The art of interchange in the presenting of news, the flair that working with other minds adds to the presentation, is somehow seen as fading away with the wonderful technology which can do so much. Too much, perhaps.

A peripheral pattern emerged in this study from an overall perspective of the newspaper operations. As new technology emerged and responsibilities shifted, the pressmen were affected by displacement when the presses needed less men to work them, even though the presses would never become obsolete. The newsroom was moderately affected in terms of displacement. The proofreader was to become obsolete with computerization. However, the newsroom stood to gain more personnel, potentially, because of the shift of job responsibilities brought about by computerization, although some newsrooms might still understaffed. It was the compositors and typesetters who were most affected by displacement in technological change. Their very existence in employment vanished as new technology made their responsibilities obsolete. Even so, in Tennessee newspapers, these participants emphasized that there was an attitude of doing whatever was necessary to retain as many employees in whatever capacity possible.

Adoption of or resistance to change is difficult to document in this study. It would be unfair to single out any

one particular job description or affiliation to define just where to start. It could be said, however, that those who had the most to lose were more likely to resist change, regardless of job or affiliation. For instance, newspaper management in large plants might resist change or procrastinate because of the economic consideration of replacing millions of dollars worth of equipment.

Commonalities of Experience

The commonalities experienced by these newsworker participants were primarily in these areas: perception of greatest technological change observed; displacement; and lead-related disease and injury. A common perception of technological change prevalent in these narratives was that offset technology and the accompanying computer-generated type were the greatest technological changes observed. All of these regions, also showed a displacement of one sort or the other, usually forced reduction of staff or retirement. And, lead-related disease and injuries were common knowledge to the majority of participants, if not through personal observation, then experience.

New technology was generally positive for these participants, although there was a love - hate relationship in dealing with change. Newsworkers generally resisted change to one degree or another, even if only in quiet anxiety. This is not unique to newsworkers; it is entirely human. The real differences in response to technological change was

perspective. The trade union perspective was concern for loss of manning quotas and control; the trade union worker was concerned primarily with the next paycheck; and the Guild newsworker may have been more concerned with overwork and initial manpower shortages associated with technological change that shifted heavier workloads on them.

As new technology arrived, the reaction and response included jubilation, regret at loss of craftsmanship, or simple pragmatism--another tool to do a better job. What was done with the hands, no matter how dirty or dangerous, was an art to production workers. When the machines could take over a creative function, the craft begin to die in eyes of some. The art of setting type and watching it become printed word meant more to some of the older participants than the bottom-line economics or hardships prior to the change. Newsworkers who wrote or edited text regretted the communication loss among co-workers, when running from place to place in the operation to get the paper out. Isolation was the result of new technology, and it was resented.

Pragmatism is a common characteristic among these participants regardless of their particular responses to technological change. Words such as dedication, open-minded, concern for employees' reaction, and adaptation reflect the commonality that makes the newspaper unique among other business endeavors. The ones who adapted to new technology

stuck with it; likewise those who resisted new technology and refused to change were left out.

The newspaper is a cultural institution, one that goes beyond the "train, get hired, and make widgets" mentality of many production-oriented businesses. It has been and is a part of the fabric of society, seeking to inform and tell the truth, while reserving the right to freedom of speech for itself and its constituents. These newsworkers had and have a signal opportunity, unlike in other businesses, to watch and participate in human history as it evolves. Founded on constitutional principles, the newspaper industry did what it had to do technologically to produce a quality newspaper for those whom it serves. Those who have worked and continue to work in the industry have paid a price so that the written news can continue to exist. The life expectancy of the newspaper in printed form is being questioned in the 1990s. If the form should change drastically based on demand--such as computerized videotext, as an example--then there will be another generation of technological changes, attitudes and responses with which to cope, including displacement and re-training.

BIBLIOGRAPHY,
NARRATATIVE SOURCES
AND
SUPPLEMENTAL
BIBLIOGRAPHY

BIBLIOGRAPHY

Abrahamson, James L., The American Homefront. Washington, D.C.: National Defense University Press, 1983.

Baker, Elizabeth F., Displacement of Men by Machines. New York: Columbia University Press, 1933.

Barnett, George E., "The Introduction of the Linotype," The Yale Review, Vol. 13 (1905).

Barnett, George E., "The Printers - A study in American Trade Unionism," American Economics Association Quarterly, 3rd ser., Vol. X, No. 3 (Oct. 1909), pp. 1-387.

Campbell, Mary E. R., Attitudes of Tennesseans Toward the Union. New York: Vantage Press, 1961.

Carlton, Frank Tracy, Ph.D., The History and Problems of Organized Labor, Boston: D.C. Heath & Co., 1911, 1920.

Clair, Colin, A Chronology of Printing. London: Cassell, 1969.

Cooke, Morris Llewellyn and Murray, Philip, Organized Labor and Production. New York: Arno & The New York Times, 1971.

Encyclopedia of Associations, (27th ed., Vol. 1), 1993. Detroit: Gale Research Inc., 1993.

Folkerts, Jean and Dwight L. Teeter, Jr., Voices of a Nation. New York: MacMillan Publishing Company, 1989

Gitlow, Abraham L., Wage Determination Under National Boards. New York: Prentice-Hall, Inc., 1953.

Groat, George Gorham, Ph.D., An Introduction to the Study of Organized Labor in America. New York: The Macmillan Company, 1926.

Hardt, Hanno, "Newsworkers, Technology, and Journalism History," Critical Studies in Mass Communication, 7 (1990), pp. 346-365.

International Printing Pressmen and Assistants Union of North America, A Keepsake of the I.P.P.A.U. (38th Convention, 1964). New York: I.P.P.A.U., 1964.

The Journal and Tribune, Knoxville, Tennessee, June 20, 1916, p. A-1, col. 3.

Kubler, George A., A New History of Stereotyping, New York: J.J. Little & Ives Co., 1941.

Leab, Daniel J., A Union of Individuals, the formation of the American Newspaper Guild, 1933-1936. New York: Columbia University Press, 1970.

Lee, Alfred McClung, The Daily Newspaper in America. New York: The MacMillan Company, 1947.

Mitchell, Broadus, Depression Decade from New Era through New Deal 1929-1941 (Vol. IX, The Economic History of the United States. New York: Rhinehart & Company, Inc., 1947.

Moen, Daryl R., Newspaper Layout and Design (2nd ed.). Ames, Iowa: Iowa State University Press, 1989.

Mooney, James Jackson, The International Printing Pressmen and Assistants' Union of North America at Pressmen's Home, Tennessee 1907-1967. Dissertation, December 1984.

Moran, James, Printing Presses. Berkeley, CA: University of California Press, 1973.

Moran, James (ed.), Printing in the 20th Century: A Penrose Anthology. New York: Hastings House Publishers, 1974.

Mott, Frank Luther, American Journalism A History: 1690-1960. New York: The MacMillan Company, 1962.

Patten, Cartter, A Tennessee Chronicle. Chattanooga: (no publisher cited), 1953.

Penrose Annual (1970). New York: Hastings House, 1970

Shryock, Richard H., and Welch, William H., National Tuberculosis Association 1904-1954. New York: National Tuberculosis Association, 1957.

Shultz, George P., and Baldwin, George P., Automation: A New Dimension to Old Problems. Washington, D.C.: Annals of American Economics Public Affairs Press, 1955.

Schuneman, R. Smith, (ed.), Photographic Communication. New York: Hastings House, 1972.

Tennessee Code Annotated, Vol. 50, Sections 50-1-201,202.

Trask, David F. (ed.), World War I at Home, Readings on American Life, 1915-1920. New York: John Wiley & Sons, Inc., 1970.

United States Bureau of Labor, Monthly Labor Review. Washington, D.C.: U.S. Government Printing Office, Vol. 15, No. 5, November, 1922.

The Volume Library. Nashville, TN: The Southwestern Company, 1974

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SUPPLEMENTAL BIBLIOGRAPHY

Adams, J. Michael and Faux, David D., Printing Technology (2nd ed). N. Scituate, MA: Breton Publishers, 1982.

Andrews, Sir Linton, Problems of An Editor (A Study in Newspaper Trends). London: Oxford University Press, 1962.

Annual Bulletin of Vital Statistics for the Year 1940 [-1945]. Nashville: State of Tennessee Department of Public Health.

Baier, Kurt and Rescher, Nicholas, Values and the Future. New York: The Free Press, 1969.

Baker, Elizabeth Faulkner, Printers and Technology. New York: Columbia University Press, 1957.

Batstone, Eric, Boraston, Ian, and Frenkel, Stephen, Shop Stewards in Action. Great Br.: Basil Blackwell & Mott, Ltd., 1979.

Cashman, Sean Dennis, America in the Age of the Titans The Progressive Era and World War I. New York: New York University Press, 1988.

Chase, Stuart, "Laid Off at Forty," Harper's Monthly Magazine, 159:340-347 (Aug. 1929).

Comparato. Frank C., Chronicles of Genius and Folly (R. Hoe & Company). Culver, CA: Labyrinthos Press, 1979.

Cranford, "Effects of the Teletypesetter Upon Newspaper Practices," Journalism Quarterly (1952) 29:181-186.

Ekirch, Arthur A., Jr., Progressivism in America - A Study of the Era from Theodore Roosevelt to Woodrow Wilson. New York: New Viewpoints, 1974.

Encyclopedia of Associations. Detroit: Gale Research, Inc., 27th ed., 1993.

Fitch, John A., Social Responsibilities. New York: Harper & Bros., 1957.

Foner, Philip S., Women and the American Labor Movement From World War I to the Present. New York: The Free Press, 1980 (Vol. II).

Foner, Philip S., Women and the American Labor Movement From Colonial Times to the Eve of World War I. New York: The Free Press, 1980. (Vol. I).

Fourteenth Census of the United States State Compendium Tennessee. Washington, D.C.: Department of Commerce Bureau of the Census, 1925.

Glaberman, Martin, Wartime Strikes, The Struggle Against the No-Strike Pledge In the UAW During World War II. Detroit: bewick/ed Publications, 1980.

Gould, Lewis L. (ed.), The Progressive Era. New York: Syracuse University Press (1974).

Green, "The Evolving Technology of Communication," Electrical Engineering (May 1959): 470-480.

Hanson, "They Laughed when I sat Down at the CRT," Folio (Oct. 1976) 5:57-70.

Harris, Herbert, Labor's Civil War. New York: Greenwood Press, 1969.

Harter, Eugene C., Boilerplating America. Lanham, MD: University of Press of America, 1991.

Hattery, Lowell H., and Bush, George P. (eds.), Automation and Electronics in Publishing. New York: Spartan Books, 1965.

Horowitz, Ruth L., Political Ideologies of Organized Labor, New Brunswick, NJ: Transaction Books, 1978.

Hutt, Allen, ROI, The Changing Newspaper. London: Gordon Fraser, 1973.

Johnson, Julia E. (ed.), Industrial versus Craft Unionism. New York: The H.W. Wilson Company, 1937.

Karolevitz, Robert F., From Quill to Computer (The Story of America's Community Newspapers). Freeman, SD: Pine Hill Press, 1985.

Kelber, Harry and Schlesinger, Carl, Union Printers and Controlled Automation. New York: The Free Press, 1967.

Maddison, John, Information Technology and Education. Milton Keanes, England: The Open University Press (1982).

Marzio, Peter C., The Men and Machines of American Journalism. Washington, D.C.: The National Museum of History and Technology, The Smithsonian Institute, 1973.

Mesthene, Emmanuel G., Technological Change, Its Impact on Man and Society. Cambridge: Harvard University Press, 1972.

Millis, Harry A. and Montgomery, Royal E., Organized Labor. New York: McGraw-Hill Book Company, Inc., 1945.

Preliminary Population Report General Population Statistics and Trends. Nashville: Tennessee State Planning Commission, June 14, 1935.

Robert Hoe & Co., A Short History of the Printing Press. New York: Robert Hoe & Co., 1902.

Schaffer, Ronald, The United States in World War I, A Selected Bibliography. Santa Barbara, CA: Clio Books, 1978.

Scott, Daniel T., Technology and Union Survival A Study of the Printing Industry. New York: Preager Publishers (1987).

Sears, Joseph Hamblen, Tennessee Printers 1791-1945.

Shearer, Benjamin T., and Huxford, Marilyn, Communications and Society (A Bibliography on Communications Technologies and Their Social Impact). Westport, CT: Greenwood Press, 1983.

Smith, Anthony, The Newspaper, An International History. London: Thames and Hudson, 1979.

Sparer, Phineas J., M.D. (ed.), Personality, Stress and Tuberculosis. New York: International Universities Press, Inc., 1956.

Taft, Philip, Organized Labor in American History. New York: Harper & Row, 1964.

The American Pressman. Washington, D.C.: International Printing Pressmen and Assistants' Union, July and August, 1909.

Trask, David F. (ed.), World War I at Home, Readings on American Life, 1914-1920. New York: John Wiley & Sons, Inc., 1970.

United States Bureau of Labor, Monthly Labor Review. Washington, D.C.: U.S. Government Printing Office, Vol. 26, No. 2, February, 1928.

United States Bureau of Labor, Monthly Labor Review. Washington, D.C.: U.S. Government Printing Office, Vol. 30, No. 5, May, 1930.

Wilhelmsen, Frederick D. and Bret, Jane, The War in Man: Media and Machines. Athens: University of Georgia Press, 1970.

Wynn, Neil A., From Progressivism to Prosperity, World War I and American Society. New York: Holmes & Meier, 1986.

A P P E N D I X E S

Appendix A

Structural questions provided for participants

1. What were the years that you worked in the news industry and in what capacity?
2. What were the work factors that affected your life the most?
3. What did you notice about the change(s) in your co-workers when new technology arrived?
4. How did the technological change affect you physically?
5. Were you a part of organized labor unions? If so, which one(s)?
6. What in your opinion was the Union's response to technological change? How did it deal with change?
7. Did technology change your job situation? If so, how?
8. Did you personally suffer from any medically-diagnosed disease that was aggravated by working in the newspaper industry? What did you have?
9. Did you have co-workers who suffered from disease that was aggravated by working in the newspaper industry? What did they have? What caused it?
10. Did new technology improve the work environment as to safety and disease? If so, how? If not, why?
11. What technological change improved working conditions?
12. What technological change worsened working conditions?
13. What was the greatest technological change you observed? Why was it the greatest?
14. Why did you choose to work in the newspaper industry?
15. If you had it to do all over again, would you still have worked in the newspaper industry? Why or why not?
16. What was the most exciting part of your work?
17. What was the most unexciting part of your work?
18. In general, how did you respond to new technology when it arrived?

Appendix B

Newspapers Represented by the Participants in this Study[143]

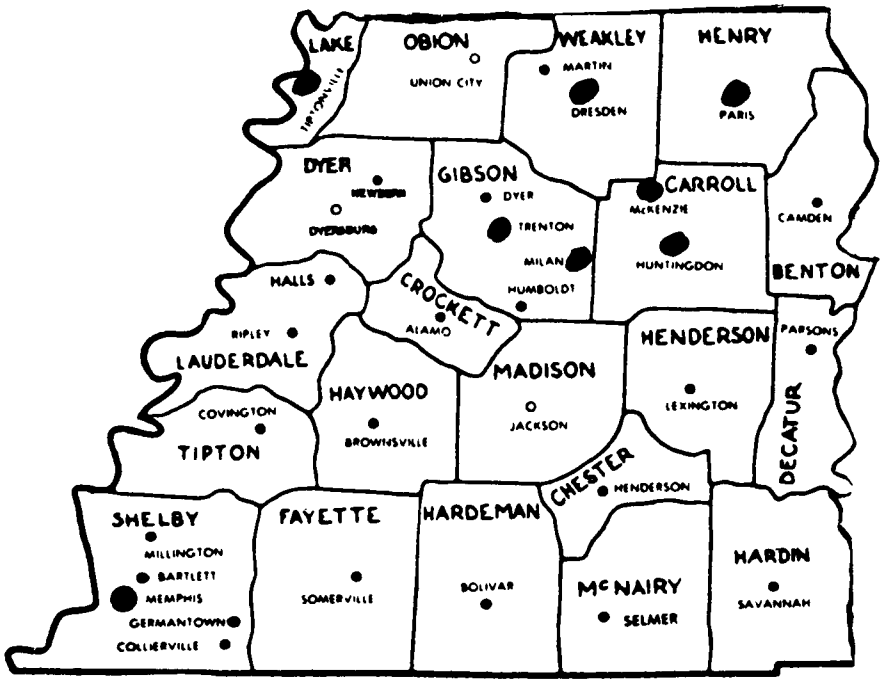
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The Camden Chronicle
Chattanooga Times
Chattanooga News-Free Press
Clinton Courier-News
Cleveland Daily Banner
Commercial Appeal (Memphis)
The Daily Herald (Columbia)
Daily Post Athenian
Dresden Enterprise
The Harriman Record
The Herald Chronicle (Winchester)
Herald Gazette (Trenton)
Johnson City Press
Kingsport Times-News
Knoxville News-Sentinel
Knoxville Journal
Knoxville Times
Knoxville Dispatch
Lake County Banner
The Leaf Chronicle (Clarksville)
Maryville Daily Times
McKenzie Banner
Memphis Daily
Milan Exchange
Nashville Banner
The News-Examiner (Gallatin)
Oak Ridger
Paris Post-Intelligencer
The Tennessean (Nashville)

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[143] Newspapers with which participants were associated at one time or another during the time period studied. Some newspapers no longer exist.

Appendix C

WEST TENNESSEE MAP[144]

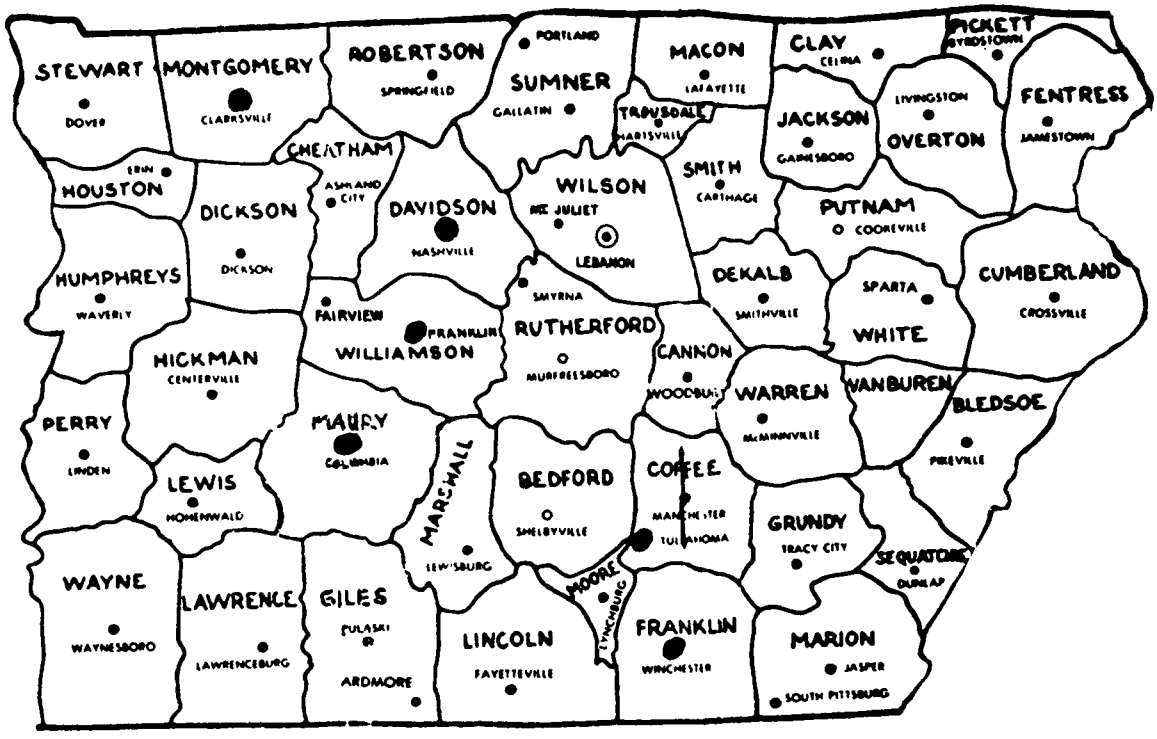


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[144] The large dots represent the cities in which participants worked. The map source is Tennessee Press Association Directory, 1992.

Appendix D

MIDDLE TENNESSEE MAP[145]

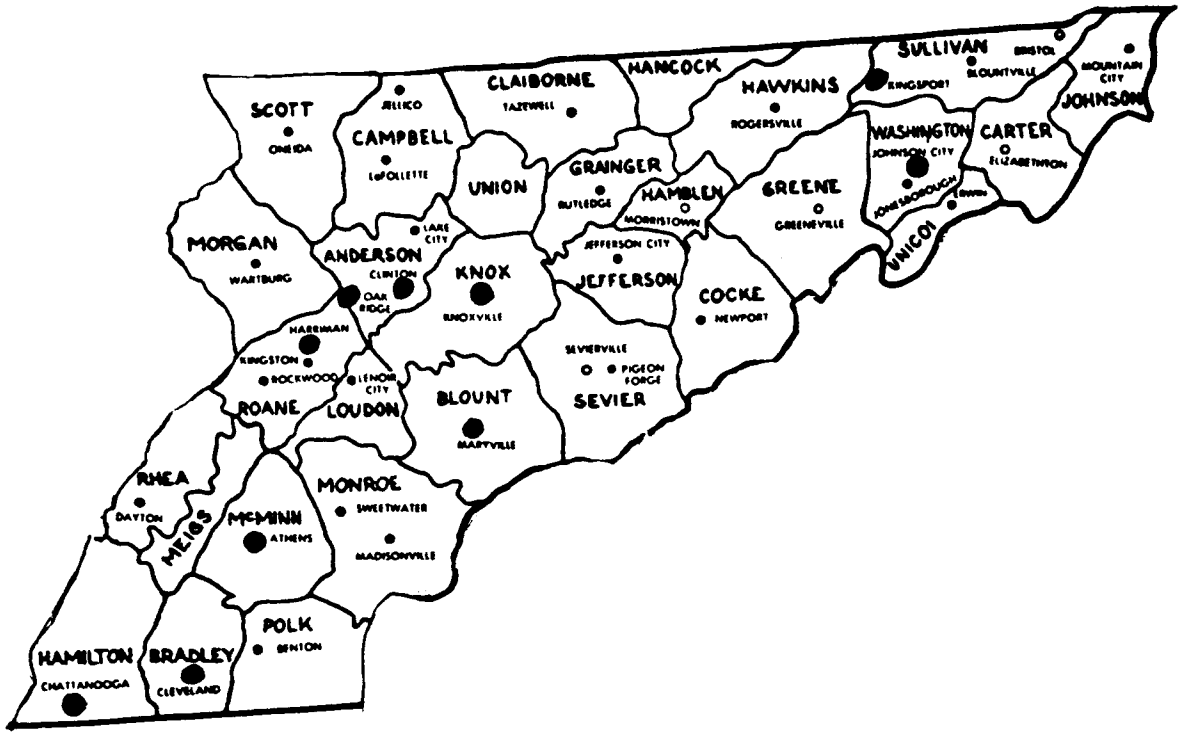


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[145] The large dots represent the cities in which participants worked. The map source is Tennessee Press Association Directory, 1992.

Appendix E

EAST TENNESSEE MAP[146]



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[146] The large dots represent the cities in which participants worked. The map source is Tennessee Press Association Directory, 1992.

Appendix F

THE NEWSPAPER GUILD MEMBERSHIP IN TENNESSEE

During the time period studied and to date, there are three locals in Tennessee: Memphis, Knoxville, and Chattanooga. The Guild began in 1933. Mr. David Eisen of the Newspaper Guild attributes the decline of membership after 1976 to cutbacks in the industry.

1936	1946	1956	1966	1976	1986	1992
184	265	365	349	529	448	388

Source: National Newspaper Guild, 1993.

Appendix G

TENNESSEE NEWSPAPER STATISTICS 1920-1990

(Number of newspapers published by year)

	Daily Newspapers	Non-daily Newspapers
1920	16	185
1929	22	160
1940	25	150
1950	29	133
1960	27	128
1970	30	128
1980	30	92
1990	29	142

Source: Gale Directory of Publications, Detroit (formerly Ayers Directory)

VITA

Ms. Meek, a native of Mississippi, has spent most of her adult life in Tennessee. She holds a Bachelor of Science in Education degree from Mississippi College, Clinton, Mississippi, with a major in Speech and Communicative Arts. She received her Master of Science degree in Communications in August, 1993 from the University of Tennessee, majoring in Journalism with an emphasis in history and law. She will pursue a doctorate in education at The University of Tennessee beginning in the fall of 1993. Her collateral focus within the College of Education will be adult education and outside the College will be speech communication. Future plans are to teach communication in a four-year institution of higher education and to work in education administration with an emphasis on the special needs of the adult student.

Academic honors include Alpha Psi Omega, national drama society and Kappa Tau Alpha, the national society for scholarship in mass communications. Ms. Meek is also a member of Association for Education in Journalism and Mass Communication. She is a member of Toastmasters International, an organization devoted to the advancement of effective public speaking. Ms. Meek has obtained the rank of Able Toastmaster. During her career in Toastmasters, she participated in and won local, area, and district (state-wide) speech evaluation contests, and participated in one Southeast Regional meet. She was Area I Governor of District 63 (State of Tennessee), president of the Nashville Club, and sponsored the Network Birmingham Toastmasters club.

Her background includes administrative support work in several areas: accounting, health care education, banking, radio advertising and sales, personnel, legal education, and law practice. She has varied outside interests which include, among others, reading, keyboard, singing, sewing, harassing spouse, and cooking.