Construction techniques used on women's dresses and wraps during the 1860s

by

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INTRODUCTION

Justification

Over the course of this century, there has been a steadily growing appreciation for textiles in the world of decorative arts. Not to be excluded from this "textile mania" is the category of historic costume. Although the recognition of historic costume as a legitimate art form remains far from universal, many museums have devoted entire wings expressly to its appreciation. Unfortunately, one major problem faced by these museums is the proper dating of their apparel holdings. Methods presently used to date historic garments consider mainly the design elements (i.e., proportion, silhouette, style features, and trim) associated with various historic periods. Despite the relatively high degree of accuracy that this procedure has produced, some garments persist in baffling even the best trained researchers.

Perhaps dating by design elements alone is not enough. According to Haggard (1972), no studies have produced evidence to indicate that one particular part of a garment provides the definitive clue to its dating. It is, instead, a combination of many factors. This problem of dating becomes particularly apparent when garments are not 'high fashion' styles, or result from the modification of earlier styles. One of the most perplexing challenges faced by the historian is the identification of a garment's original design elements, in the face of later alterations. For instance, a garment that was originally made in the 1850s could have been modified a decade later to conform to the style features of the 1860s. Costume dating is even further

complicated by cases of reconstructed garments in earlier styles (e.g., theatrical costume and masquerade costume).

Arnold (1973) recommended that the safest method of dating costumes was to consider the shape of the garment as it was worn (i.e., what types of foundation garments were worn beneath it), plus the cut and construction techniques associated with each historic period. This procedure would help reveal certain discrepancies that might exist within a garment. Arnold, however, focused her research on English costume as it was altered to meet later style requirements. She did not intend to define the construction techniques associated with each historic period.

Bradfield (1968) also recognized the importance of construction techniques in the dating process, but did not try to classify them systematically. Instead, she focused upon the incorporation of construction information into the total description of a garment.

Schlick (1981) made a significant research contribution to historic costume dating by construction features. Using information obtained from secondary sources, primarily costume references, Schlick developed a systematic process for dating women's dresses of the nineteenth century by their structural features. Many of the books that she used to date American costume, however, were written by British authors and dealt with English costume. The study that I am presenting here differs from the Schlick study because the raw data come from actual surviving garments and contemporary American women's periodicals.

Although this particular study addresses only the construction techniques of a selected decade, 1860-1869, it is actually to be part

of a series of investigations which will eventually include the entire nineteenth and early twentieth centuries. It is in this larger context that this study finds its true usefulness. Until research has been done on the remaining decades, a contrast cannot be made of the differing techniques from one style period to the next. The fact that narrow piping, for example, was used around the armscyes of 1860s women's garments does not exclude it from possible use in other periods as well. Therefore, a complete investigation of construction techniques must be made across several decades before broad conclusions may be drawn about dating through construction techniques.

Purpose

I proposed in this study to develop a descriptive summary of specific garment construction techniques used on women's dresses and wraps during the years 1860-1869, to assist in the dating of historic garments. It was not my intention to replace existing methods of costume dating, but rather to supply the researcher with an additional tool in the dating process. This information might alert historians to possible inconsistencies within a garment. Such inconsistencies, for example, might be the result of later alterations or modifications to a garment. If a researcher could confirm the date of a garment's construction characteristics, he or she might even be able to use the same method to date a garment's alterations or modifications.

Another aim of this study was to provide guidance to individuals or institutions interested in the reconstruction or restoration of historic

garments, using the construction techniques authentic to a particular style period.

Hypotheses

The umbrella null hypothesis for this investigation into historic clothing construction techniques is that: There is as much variation of construction techniques in women's dresses and wraps within one period of costume style as among different periods of costume style. Several factors may or may not be intimately related to the selection of techniques. Particular null hypotheses developed are: For the period 1860-1869:

1. There is as much variation of construction techniques within a single style of women's dress (or wrap) as among several prevalent styles of dress (or wrap).
2. Technology does not affect the choice of construction techniques in dresses and wraps.
3. The construction techniques prevalent in surviving dresses and wraps are not related to published information about the style and structure of women's dresses and wraps.
4. The type of fabric in a dress or wrap does not affect the choice of construction techniques found in the garment.

Elements that may affect the construction of a garment that were not considered in this study (i.e., the formality of a garment and the geographical or regional differences in construction), are discussed in the section on recommendations for future research.

Limitations

This study attempted to accept or reject the four particular hypotheses as they relate strictly to women's dresses and wraps of the 1860s. Men's and children's clothing, as well as other women's garments (i.e., underclothing and foundations) were not considered in the study. These omissions should each be taken up independently in future research.

The period 1860-1869 was selected for several reasons. First, the increased publication and circulation of ladies' periodicals (i.e., Harper's Bazar, Godey's Lady's Book and Magazine, and Peterson's Magazine) could have had a homogenizing effect upon the construction techniques used on garments, or at least may have helped to disseminate new techniques more rapidly. Second, the style changes from the 1850s to the 1860s may have encouraged a change in the construction methods of the 1860s.

Another consideration in the selection of the period was the availability of extant garments. It was desirable to study as many examples as possible, and earlier decades did not appear to be as well-represented in Iowa and Minnesota. And finally, I suspected that the surge in invention and the availability of sewing-related technology during the 1860s may have had a profound impact upon sewing techniques of the 1860s and subsequent decades.

The primary focus of the study was upon the construction features of garments, rather than on the design elements, except as they related to the choice of construction techniques. For example, the pattern

motif in a fabric was not considered important except in terms of construction (e.g., if an attempt had or had not been made at matching pieces). But, if the weight of a fabric influenced the types of support (i.e., interfacing or underlining), it was considered pertinent. Similarly, pattern drafting and draping were not explored, except as they related to the construction of a garment. For example, it was important in the investigation of seam finishes to note whether garment pieces had been cut on the bias or had been cut on the straight grain to make use of the selvage edges.

For feasibility of data collection, the garments examined in the study came from 13 museum or university collections. These were clustered geographically and limited to central and northeastern portions of Iowa and the Minneapolis-St. Paul vicinity. This geographical clustering allowed for possible representation of garments from both rural and urban communities. However, not all of the garments had known origins or actually came from those localities. Some, for instance, may have been brought to Iowa and Minnesota as families moved westward.

Assumptions

Before this research could proceed, a primary assumption was first made that there would be a sufficient number of dresses and wraps datable to 1860-1869 to allow generalizations to be made about typical construction techniques. Second, it was assumed that construction advice could be found in women's periodicals of the 1860s. And, finally, it was assumed

that fashion plates of the period 1850-1870 would serve a dual function:

1. To aid in the initial selection of dresses and wraps to be examined, and
2. To provide some confirmation of the "earliest possible" date of a garment.

REVIEW OF LITERATURE

The literature reviewed for this study has been divided into three categories and will be addressed in the following order:

1. Studies that consider only the design elements of a garment in the dating process.
2. Studies that consider construction techniques important in the dating process, but do not attempt to relate the observed techniques to a fashion period.
3. American studies that attempt to classify garment construction techniques according to style period.

This last category has been further divided into two subgroups:

a. Studies that use secondary sources.

b. Studies that use primary data, specifically from actual garments.

Dating by Design Characteristics

Despite the many methods developed by costume historians to date and classify historic clothing, no one method has provided answers to all of the dating problems. The gamut of dating techniques runs from moderately intuitive to extremely systematic. Haggard (1972), for instance, applied systems of numerical taxonomy to costume proportions in order to identify similarities and differences between fashion periods quantitatively and systematically. Furthermore, Haggard's taxonomy was similar to many other dating devices because it identified only the design elements of a garment (i.e., proportion) associated with various historic periods. Rarely were construction techniques

taken into account.

Anderson's (1967) investigation of women's dresses from the 1920s illustrates the same point. In her study, Anderson established some "verbal criteria" for dating dresses of that decade by examining the contemporary fashion literature (i.e., pamphlets, bulletins, advertisements, and women's periodicals) for design information only. The present study differs from Anderson's because it uses literature to investigate the relationship between construction advice in periodicals and the way garments were actually sewn.

Dating by Construction Techniques

Two British costume historians, Arnold (1973) and Bradfield (1968), acknowledged the importance of construction techniques in the dating process. Arnold, for example, in her examination of English costume, used construction to identify cases of garment tampering (i.e., alterations or style modification). Neither of the researchers, however, attempted to generalize about the techniques typically used in various fashion periods. Instead, they described what was actually found in individual garments, each exemplifying a different style. Furthermore, since these British historians examined strictly European (primarily British) costumes, the techniques that they observed might not be applicable to American dress of the same period.

Dating that Classifies Construction Techniques

Although some American studies were conducted in the area of dating by construction techniques, the data have only been gathered from either secondary sources (costume references) or garments in single university costume collections.

Classification of secondary information

Schlick's study (1981) blended construction characteristics (i.e., hem depth, placement of boning, closures, tapes, darts, and finishes) with garment design features (i.e., unit proportions, shapes of necklines and sleeves) to form a category of "structural" features. As these "structural" features appeared in costume references, they were organized into tree diagrams and then transferred to a decision table for use as a dating instrument.

Schlick further ordered the "most discriminating characteristics" into an algorithm. The accuracy of the algorithm was then tested by a panel of judges, on actual nineteenth century women's dresses from the costume collection at Indiana University. Schlick found that the algorithm had about an 80 percent accuracy rating.

The present study differs from Schlick's in two major respects. First, as Schlick stressed, it was not the purpose of her study to uncover new garment information, but rather to develop a reliable and practical instrument for dating. Therefore, she accepted the use of British secondary sources for structural information, rather than using primary United States sources. One goal of the present study, however, is to gather new information about construction methods in the

United States. Hence, the data in the present study came from actual garments and periodicals of the 1860s, rather than from costume references.

The second major difference between the two studies pertains to the design of the dating tool. Rather than collapse the information into tree diagrams and algorithms, as Schlick did, I chose to organize it into a descriptive summary.

A study by Vachon (1976) to develop a dating tool also used secondary sources (i.e., British costume references) but in combination with telephone surveys to selected museum curators. Instead of organizing the information into tree diagrams and algorithms, Vachon ordered it by decades into a checksheet. Each decade, from 1850 to 1949, contained general information pertaining to both the design and construction of bodices and skirts. The scope of the construction information, however, was quite limited. Bodices from the 1860s, for instance, had only five construction features listed:

1. Front button or hook and eye closure,
2. Lined with white fabric,
3. Set-in dropped shoulder sleeve,
4. Vertical waist darts,
5. Boned.

Garments used in the present study, however, were not always boned, and many of them used several types of lining fabrics. This suggests that secondary sources are deficient in construction information.

Classification of primary garment data

The first attempt to systematically classify construction techniques using actual garment data was probably made by Carter (1954). Carter's study of nineteenth and early twentieth century dresses in the Drexel Institute's historic costume collection tried to answer two questions:

1. Do construction details occur in definable cycles?
2. If construction cycles exist, do they parallel style features, or do they occur independently?

Carter concluded that construction details do not occur in definable cycles, and that apparently, no exact match between a specific construction technique and a corresponding style feature could be determined, even though there did seem to be some observable relationship. Perhaps one cause for the ambiguity of the findings is the absence of many style divisions. Carter (1954, p. 5) divided her style periods very broadly according to changes in skirt silhouette as formulated by Young in 1937:

1. First Tubular Cycle, 1796 through 1829,
2. Bell-Shaped Cycle, 1830 through 1867,
3. Back-Fullness Cycle, 1868 through 1899,
4. Repeat of Tubular Cycle, 1900 through 1937.

These few style divisions did not take into consideration design features other than silhouette. Furthermore, Carter examined only four dresses from the 1860s. The present study differs from Carter's because of its 1) narrower period (1860-1869), which permits a more precise and detailed description of the possible relationship between style and construction, and 2) larger, more varied sampling of garments.

Another observation that Carter made — but did not test — pertained to the relationship between technology and dress construction. She contended that the construction techniques that appeared in each category of skirt silhouette seemed to reflect the technology of the period.

Miller (1975) further addressed the topic of technology and its relationship to the design and construction of women's day dresses. After examination of the dresses for the following construction criteria:

1. Sewing method (hand or machine sewn),
2. "Finesse" and location of hand sewing,
3. Number of pattern pieces,

Miller determined that a trend toward simplification of both design and construction were related to advancements in sewing technology. However, the criterion of "finesse" was ambiguous since it was not defined and could refer to a garment's neatness.

The present study differs from Miller's in two respects. First, it includes more construction criteria (e.g., garment support, closures, position of openings, pockets, and hem depths). Second, it describes garments from several museum and university collections, rather than just one university collection. Furthermore, the garments used by Miller were limited to the period 1890 to 1940. The sewing machine became available to housewives during the mid-1850s; therefore, garments for the years 1850 to 1890 also need to be studied.

Summary

Because previous studies either:

1. Operated under very broad style divisions,
2. Examined British garments,
3. Examined American garments from single costume collections,
4. Were limited in construction criteria,

the present study examines women's dresses and wraps of the period 1860-1869 from several costume collections. Furthermore, this study tests the relationship between construction techniques and 1) style, 2) technology, 3) published information about sewing, and 4) fabric type.

PROCEDURES

Preliminary Search of Primary Literature

In order to select the garments for this study, two preliminary investigations were made. The first was a concentrated study of the typical design features (i.e., silhouette and trim) and fabrics of women's dresses and wraps during the 1860s. This information was gathered from three major sources:

1. Color fashion plates and their accompanying descriptions in women's fashion magazines,
2. Other primary sources (i.e., old photographs) in historical references on Iowa for serious confirmation of what was worn,
3. American and European costume references.

The European references were included in this investigation because of the tremendous Parisian influence upon American fashions at that time. Subscribers to Godey's Lady's Book and Magazine (Godey's), for instance, were frequently reminded of Godey's specially engaged fashion correspondent in Paris, and thereby guaranteed the most current information of French fashions. Thus, French fashions acted as a starting point for particular styles and revealed a general trend in fashions of the 1860s. However, the exposition of new fashion trends in periodicals did not guarantee their immediate adoption. According to Hooper's study (1976) of rural Missouri women's clothing in the 1860s, a few years of fashion lag probably did exist. Hooper contended that the silhouette was particularly affected by lag due to the common practice (prior to the appearance of clothing patterns) of picking

apart old garments to use as patterns for new garments (Hooper, p. 27).

The general design characteristics of 1860s dresses were found to be in a state of transition. The skirts, for example, lost much of the bell-shaped fullness characteristic of the previous decade, and adopted a smoother fullness via gores, with the majority of the fullness in the back. The "pagoda" sleeve of the 1850s was gradually abandoned for a fitted and slightly curved two-piece coat sleeve. Pointed waists slowly yielded to straighter and slightly raised waists (often belted). Although the slope of the shoulders remained quite steep throughout the 1860s, the very end of the decade witnessed a very slight raising of the shoulder seam. Combinations of these features qualified a garment for inclusion in the study. There were some features, however, that remained virtually constant throughout the decade. The bodice back, for example, typically had princess seaming for a smoother fit. The neck was either bound or had a narrow band collar, and the center front opening was fastened with either hooks and eyes or buttons. These features were confirmed by Hooper (1976), who further contended that, regardless of the fabric, the features remained constant.

Fabrics that were frequently used for dresses include: 1) solid and plaid silk taffetas, 2) plaid wools, and 3) cotton calicoes. These were often trimmed with silk fringe in a yoke pattern, or edged with contrasting braid. Buttons were also used for decoration down the center front of dresses, regardless of their functional value. Other trimming fads appeared which reflected a military influence (i.e., the Zouave styles).

The second part of the preliminary investigation was an examination of the sewing-related technology and the availability of sewing tools and notions during the 1860s. This part of the investigation was important because it defined which construction techniques were technologically feasible. Topics that were studied include: 1) sewing machines and their attachments, 2) the ready-to-wear garment industry, 3) sewing thread, 4) cutting and pressing equipment, 5) notions (e.g., hooks and eyes), and 6) paper patterns. I will discuss each of these topics in detail in the section on garment findings. Garments that evinced an abundance of techniques technologically inappropriate to the period were seen as lacking in authenticity and omitted from the study.

Development of a Worksheet

The next step in the study was the development of a data collection worksheet. After considering the immense variations of construction possible in the garments, I decided that an open-ended worksheet was better suited to the study than a closed checklist. In addition, the worksheet allowed room for helpful sketches. It was divided into several sections (see Appendix A), with subtopics under each section. In the first section, I recorded information obtained from the museum records (i.e., garment donor or owner, documented background, garment's degree of formality or occasion for which it was worn, and condition of garment).

The second section required a complete description of a garment's

design elements. Included in this were descriptions of the silhouette, style features, applied trims, number of garment pieces, and types of fabrics used. The remainder of the worksheet consisted of the features of construction. These included ten major categories: 1) major seams, 2) minor seams (i.e., princess, sleeve, shoulder, armscye, skirt waistband, collar, cuffs, and pockets), 3) gores and godets, 4) darts, 5) support materials, 6) hems, 7) application of trim, 8) ribbons and tapes, 9) closures, and 10) miscellaneous. The last page of the worksheet allowed space for detailed sketches of a garment. Before visiting the museums, I tested the worksheet on several 1860s dresses from the historic costume collection at Iowa State University. There appeared to be no problems with it; hence, I did not modify it.

Choice of Museums

The selection of museums for the study was based upon two criteria: 1) the number of garments said to date from the 1860s, and 2) the close proximity to other museums. This last criterion of geographical clustering was necessary to limit the expenses of data collection. The 13 museums and universities that I visited were located in the central and northeastern portions of Iowa, as well as the vicinity of Minneapolis-St. Paul (see Appendix B). This allowed me to see garments possibly worn in both rural and urban communities at that time.

Screening of Garments

Upon visiting a museum, I found it necessary to screen each garment for authenticity. To do this, I critically examined them for fabric and design characteristics that had been determined typical of the 1860s. Next, I made a thorough check of the museum records to find out if any restoration or repair work had been done by the museum. This recorded information, however, I treated with much circumspection, since a garment could have been repaired before reaching the museum or repairs simply not recorded in the museum files. I also checked each garment for suspicious signs of tampering or alterations (e.g., differences in thread color, or old needle-hole marks). Based upon the number of incongruities within a garment, I either accepted or rejected it for the study.

Examination of Garments

Once a garment was accepted, I made a more detailed inspection of its construction, and then filled out the worksheet. These examinations were conducted under a variety of conditions. Several garments had to be examined while on display mannequins. Others were laid out horizontally on tables covered with white cotton sheeting. Levels of lighting also varied somewhat, but generally the garments were examined and photographed under fluorescent light. A few museums in the study required gloves to be worn when handling the garments. This diminished my finger dexterity and may have hampered me slightly in the probing operation of certain garments. After completing the worksheet, I took color

photographs. These emphasized the interior parts of a garment to highlight the construction techniques used.

Second Review of Primary Literature

A second phase of this study involved a search through women's periodicals of the 1850s and 1860s for sewing instructions. The objective of this phase was to determine if construction techniques used on most of the selected garments were the same techniques recommended to women in periodicals. The information from the two sources was then synthesized by means of written description and the frequencies of the selected construction features in surviving garments were expressed in bar graphs.

SEWING TECHNOLOGY AND MATERIALS AVAILABLE IN IOWA AND MINNESOTA

Contrary to the sterotypical images of upper midwest pioneer women as sturdy creatures, struggling in poverty, and dressed in homespun and leather, many surviving diaries and household ledgers indicate that such rugged lifestyles were surprisingly shortlived (Riley, 1981, p. 70). Furthermore, they reveal that typical Iowa women who longed to stay abreast of eastern fashions invested a great deal of time and money in clothing. The New York Tribune, as early as 1854, described Iowa women as decorated in fine lawns and rich brocades. Riley (1981, p. 73) mentioned this in her study of frontier Iowa women, and also contended that the majority of women owned at least one good dress that could be worn to weddings and funerals. Often these 'good' dresses were altered to meet the demands of later fashion trends. Similarly, Shenoi (1967, p. 3) found that Minnesota women "...despite their isolation from civilization in the earlier years of the nineteenth century, still managed to keep up to date with the rest of the nation...."

Migration to the Upper Midwest

One possible reason for such frontier preoccupation with eastern fashions may have been the tremendous, yet fluctuating, surge of migration to Iowa and Minnesota during the 1860s. Usually, the immigrants came from eastern states, but occasionally they retreated from the western ones. Some of the immigrants between 1862 and 1864, for instance, were Dakota refugees, forced by Sioux uprisings, drought, and grass-

hopper plagues to homestead further east.

As the Civil War came to a close, wagon trains, railroads, and Missouri and Mississippi River ferries ushered great hordes of prospective homesteaders to the upper midwest. The aggregate population of Minnesota in 1850 was only 6,038 (Shenoi, 1967, p. 51). Ten years later, that figure had risen to 172,023, with another 45 percent increase by 1864. By 1870, the population had jumped to 439,706, with roughly half of these people being foreign born.

Iowa counties were not exempt from the influx. The total population of the state rose from 191,982 in 1850, to 674,913 in 1860, and 902,040 in 1867. In Clay County alone, the number of farms grew from five in 1860, to 697 in 1880 (Fite, 1966, pp. 34-35). I surmise that as pioneer women developed closer contact with one another and formed social organizations, they became increasingly concerned about fashionable clothing and grooming.

Distribution of Goods

Another possible explanation for women's expanded clothing awareness may have been the widening distribution of goods. Simply, their interest in fashion may have been generated by increased exposure to fashion publications and the availability of fancy dress materials in local dry goods stores. In this respect, the railroad played a vital role.

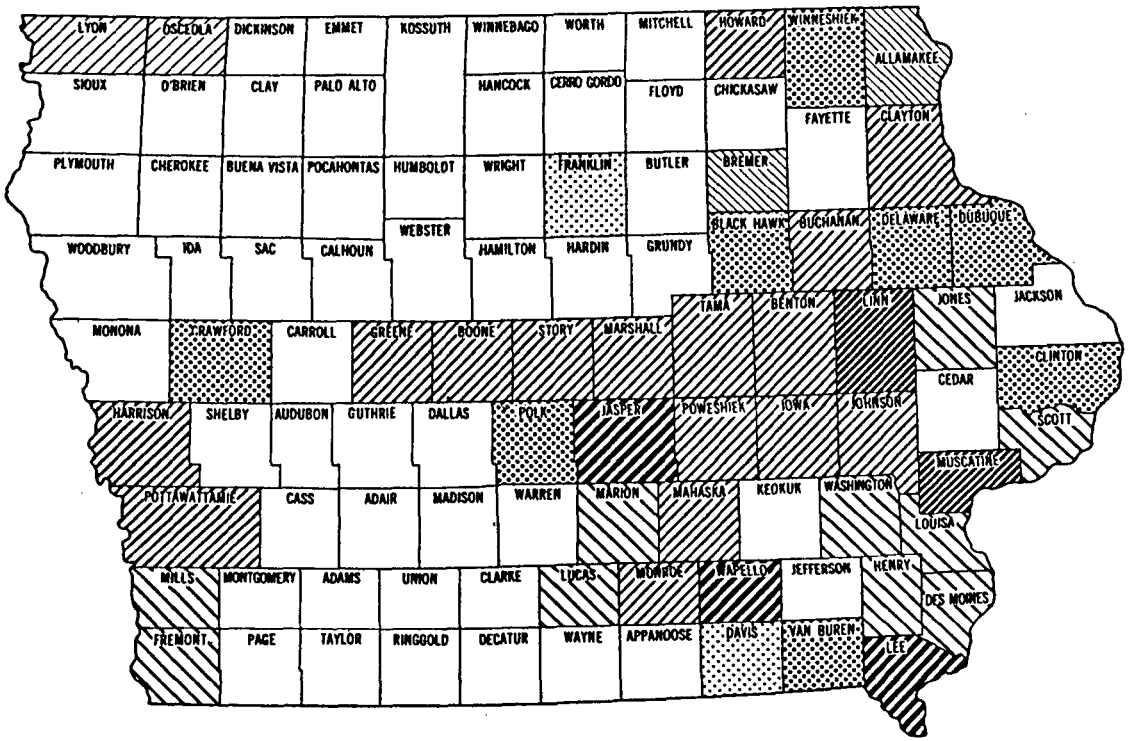
Railroads

In 1857, railroad track was extended across the Mississippi River into Davenport, Iowa. Although the big expansion in Iowa railroads did not occur until after the Civil War, enough track had been laid before then to serve the region quite well (Haack, 1979, p. 26). A study of the 1867 census of Iowa revealed that in 1865, 793 miles of track had been finished (see Figure 1). One Kossuth County woman recorded in 1862 that most goods were easy enough to obtain. Thin cottons and calicoes could be had for 20 cents a yard, and a spool of thread for 10 cents. She did mention, however, a temporary shortage of sewing needles (Riley, 1981, p. 67). Two years later, even Godey's had to stop taking orders for needles due to the tremendously inflated prices. "Owing to the great increase in price, we can no longer take orders for needles. The wholesale price is now greater than we retail them for. If they should ever get lower, we will announce our renewal of sales" (Godey's, September 1864, p. 266).

This information appears to be consistent with Hooper's (1976) findings of rural Missouri dress in the 1860s. She discovered that most cottons, wools, and sewing notions were readily available before the war, but Missourians suffered some shortages during the worst war years (Hooper, 1976, p. 32).

After the Civil War, expansion of railroad track resumed. In 1867, the Iowa census reported 1,152 miles of finished track. By the end of decade, that number had grown to almost 3,000, thus supplying many areas with rail service (see Appendix C for a list of railroads in Iowa and Figure 1 for the distribution of track).

Figure 1. Distribution of railroad track in Iowa by 1867. (The census of Iowa as returned in the year 1867, 1867.) White areas indicate no track present.



MILES OF TRACK

50-59
40-49
30-39
20-29
10-19
5-10
under 5
information not organized

Development of the Ready-to-Wear Industry

Generally, there were two options open to women of the 1860s for building their wardrobes. First, they could purchase the necessary materials at dry goods stores and sew their garments together at home. Second, they could take the purchased materials to a local dressmaker. For special occasions which required a tremendous amount of sewing to be done (i.e., weddings), people could hire a temporary live-in dressmaker. Live-in dressmakers, however, had become increasingly difficult to find due to the demand for a ready-to-wear labor force. Immigrants who had previously sought domestic employment turned, instead, to factory sewing. That in turn placed a heavy burden upon upper middle class women to do all of the family sewing (Burlingame, 1943, p. 374). The outcome was two-fold: 1) the ready-to-wear industry blossomed, and 2) families purchased sewing machines for their homes.

Ready-to-wear

By 1860, the women's clothing industry had 96 factories, with New York and Boston as the centers of apparel production. Ninety percent of the workers in the factory sweat shops were women.

> This branch of the domestic clothing trade which thus employs nearly half a million dollars in capital, and with the labor of less than 1,600 hands, produces cloaks and mantillas annually, is one of quite recent growth, and has received its principal development within the ten or fifteen years preceding the last census. The manufacture has its principal seat in New York, which has 15 large establishments, one of which employs 100 girls and makes goods to the value of $120,000 per annum.

> Two others employ 70 and 40 hands, respectively, and make each about $100,000 worth. The whole value of cloaks and mantillas made in that city in 1860 was $618,400. A large manufacturer in that city who commenced business in 1849 was the first to introduce sewing machines in the business, as well as the first to employ young women in the retail sales department. The largest establishment in Boston also employs 100 females and makes $150,000 worth of ladies' cloaks and mantillas annually, while two others in that city employ about 75 hands, and manufacture to the value of $125,000 each. All but $13,000 of the product in Massachusetts was made by 10 factories in Boston. (Allinson, 1916, p. 19)

According to the Magee study (1930, p. 111), of the U.S. manufacturing census records, the women's clothing industry was still in its infancy by the Civil War, with only a few items like outer wear and skirt hoops being produced. One possible explanation for this was that women simply preferred the fit of custom made dresses and undergarments. This desired sleek fit was further complicated by the fashion for wearing corsets. Women were also concerned that factory-made garments would all look alike, and consequently make all women look alike. In fact, it was so shocking to think of two or more women wearing the same dress that precautions were taken to the extreme. The leading Parisian designer, Charles Worth, for example, kept detailed records of his clients' gowns so that no two dresses would be made the same (DeMarly, 1980, p. 102).

Dressmakers were able to take the time to apply unique trims to their garments whereas, in a factory, such deviations from a model were inefficient and costly. Furthermore, the factory system could not keep up with the constant changes in women's fashions due to production lags. Consequently, some of the first factory-made dresses

were intended for mourning because they were often needed on a moment's notice and did not need to follow fashion trends so closely.

Since men, on the other hand, were content to wear uniformly made clothes and did not face the same fitting problems as women, the men's clothing industry developed much earlier. In fact, some men's ready-to-wear clothing (called 'slops') had been imported from Europe as early as the Colonial period. These 'slops' were very badly fitted and sewn, and limited to a small selection of sizes and fabrics (Hooper, 1976, p. 24). Godey's advised that such "cheap bought slop-clothes are scarcely worth the time and trouble of re-making into anything" (1854, p. 422). The major boom in men's ready-to-wear, however, came during the Civil War when the mass production of uniforms encouraged the standardization of sizes, job specialization, and assembly lines.

Part-made garments

Although few references to it have been found, women sometimes had a third option open to them that had existed since before the reign of Queen Victoria. It was called 'part-made' clothing, and it gained most of its popularity in England. "In 1830, T. Challinier of 109 New Bond Street advertised in the World of Fashion: 'Muslin Bodices exceedingly useful to the country trade... the dresses can be completed for wearing in [sic] a few hours' notice" (Adburgham, 1981, p. 123).

Forty years later, 'part-made' dresses were still being advertised.

The October 1870 issue of The New Fashion Book (a catalogue of British fashions), for instance, offered its readers four different methods of buying their featured costumes (Adburgham, 1981, p. 135):

1. Have it made to measure in the dressmaking department,
2. Buy it ready-made,
3. Buy the skirt ready-made, and have the bodice made to measure,
4. Buy it 'post order' by sending a list of measurements or else by sending an old bodice as a size guide.

Although part-made dresses were rarely mentioned in American fashion periodicals, one advertisement for a part-made walking dress did appear in Harper's Bazar (November 16, 1867, p. 35). "Imported walking dresses may be bought with the skirt and paletot ready made and trimmed. Material for the body is furnished." Two years later, another advertisement appeared: "Strangers making transient visits to the city can purchase the skirts and panniers of silk dresses ready-made, the waist and sleeves being made to order in a few hours" (Harper's Bazar, May 22, 1869, p. 323).

Manufacturers tried various methods of sizing ready-made clothing after the Civil War. Peter Robinson's garments came in three sizes: A, B, and C. This sizing format proved satisfactory and, by the 1880s, it had been incorporated into the production of ladies' suits, followed in the 1890s with lingerie, shirt waists, fancy waists, skirts, gowns, and neckwear.

Although New York was the first American commercial center to open up ready-to-wear department stores, it was only a short time before other eastern and midwestern cities did the same. By 1860, Philadelphia,

Chicago, Cincinnati, and St. Louis had all established major department stores. Furthermore, if something was not available in the stores, a customer could always obtain the item by mail-order from manufacturers whose addresses were often advertised in fashion journals. This distribution method was a forerunner to the large "mailorder houses" (i.e., Sears, Roebuck & Co. and Montgomery Ward) which developed later in the nineteenth century (Hooper, 1976, p. 28).

The sewing machine

One of the primary ingredients to the development of the ready-to-wear industry was the invention of the sewing machine. The rapid expansion of the sewing machine industry between 1842 and 1895 is witnessed by over 7,000 patents granted for modifications, with almost 900 issued before 1867 ("The sewing machine," 1896, p. 73). "By 1860 there were seventy-four factories in the United States producing more than 111,000 sewing machines a year, with fourteen factories devoted to the production of cases and attachments" (Pearsall, 1973, p. 31).

The treadle-powered sewing machine debuted in Iowa during the late 1850s and, as early as 1855, the Davenport Gazette ran advertisements for the Wheeler and Wilson machines. Other papers, such as the Burlington Daily Hawkeye, Fairfield Ledger, and Waterloo Courier, soon followed the example. Other sewing machine companies which advertised in Iowa included Wilcox and Gibbs; Singer; Grover and Baker; West and Wilson; Raymond; and Weed. Their machines were priced between $25 and $110 (still within the range of some budgets) and often featured attachments for hemming, tucking, cording, binding, quilting, and embroidery.

Sewing machines were made available to Iowans by several means: 1) traveling salesmen, 2) local agents for the manufacturer, or 3) mail-order directly from the company. Weeds, a New York based company, advertised their Burlington, Iowa agent as early as 1859 (Riley, 1981, p. 72). By 1870, six sewing machine dealers had begun advertising in a Des Moines business directory.

Nationwide production of sewing machines had reached an annual rate of half a million by 1870 (see Table 1). Most of this rapid growth, however, would not have been possible were it not for two things. The first was the invention of a simple grinding machine that made production of standard sewing machine parts possible. Invented by the Brown and Sharpe Company, the grinding machine transformed the previously hand-crafted sewing machine into a mass produced item (Gilbert, 1970, p. xi).

The second impetus was an ingenious patent plan by Orlando Potter (lawyer, later president of Grover and Baker). Beginning with such landmark patent suits as Howe vs. Singer and Hunt vs. Howe, the sewing machine industry of the early 1850s became bogged down in endless litigation. Inventors filed lawsuits and countersuits in continuous succession. It became apparent to Potter that a truly workable sewing machine could not be built without infringing upon another company's patent. By 1856, for example, the Singer Company had control of 25 of the 30 significant patents alone, with numerous suits against Grover and Baker and Wheeler and Wilson. Finally, all three companies met in Albany, New York for a series of patent trials. Orlando Potter seized the opportunity to introduce his plan for a patent pool, whereby companies

Table 1. Sewing machine production during the mid-nineteenth century ("The sewing machine," 1896, p. 73)

Company	1853	1858	1859	1867	1871
Wheeler & Wilson Manufacturing Company	799	7,978	21,306	38,055	128,526
The Singer Manufacturing Company	810	3,591	10,953	43,053	181,260
Grover & Baker Sewing Machine Company	657	5,070	10,280	32,999	50,838
Howe Sewing Machine Co.				11,053	134,010
Wilcox & Gibbs Sewing Machine Company				14,152	30,127
Domestic Sewing Machine Company					10,397

would mutually agree to pool all patents and, for a fee of $15.00 per machine, purchase the right to use any patents within the "Sewing Machine Combination." The only patent holder not easily persuaded into the 'Combination' was Elias Howe (inventor of the first patented, practical lock-stitch machine). Howe stipulated that he receive $5.00 on each machine sold in the United States, and $1.00 on each machine sold abroad. In addition, Howe required a minimum of 24 manufacturers in the 'Combination' in order to prevent monopolies from forming (Brandon, 1977, pp. 97-98). Eventually, however, the major patents expired and the price of machines fell.

Of the 465 patents issued under the title of 'sewing machine' during the years 1860 to 1881, none were major breakthroughs. They did, however, mark the beginning of a trend which continued throughout

the twentieth century, the division of the sewing machine industry into two separate spheres: 1) the industrial machine and 2) the domestic machine.

The industrial machine The early industrial machine was characterized by tremendous bulk, weight, and austerity. Purely utilitarian in nature as the industrial machine was, no one attempted to improve its aesthetic qualities. Quite early, however, inventors made great strides in adapting the machine to various types of operation. Singer's foot treadle, for instance, was well-received. Unlike the earlier hand-cranked variety, the treadle machine afforded the operator use of both hands to manipulate the cloth through the needle.

While the treadle machine continued to be the favorite kind of machine well into the second decade of the twentieth century, a few factories of the 1860s used steam power (Pearsall, 1973, p. 29). However, an even greater turning point came in 1871, when Solomon Jones attempted to electrically power an 1865 machine. Isaac Singer perfected Jones' idea, but it was not until 1889 that the first successful electrically powered sewing machine was completed. It became an instant success with the apparel industry due to its ability to start and stop much faster and more accurately. In addition, the machine operator could sew for much longer periods of time without tiring.

Specialization was another major characteristic of the industrial machine. Not only was the sewing machine adept at clothing production, but it was adaptable to manufacturing shoes, gloves, umbrellas,

upholstery, books, mattresses, carpets, corsets, tents, hosiery, millinery, and flags.

The domestic machine While the industrial machine moved in the direction of specialization of tasks, the domestic machine held to a course of ornamentation, generalization, and price reduction. By the end of the 1850s, the appearance of the domestic machine had become quite a preoccupation. Painted floral borders or geometric patterns often adorned the "iron maiden." Gradually, however, the ornamentation became excessive and was directly incorporated into the functional apparatus of the machine. The shape, for example, often mimicked animal or mythological forms. Some of the more popular ones included the dolphin and cherub (1858), the horse, the mermaid (1859), and (the most peculiar of all) the sewing shears machine, which "has the appearance of a pair of scissors clamped on a wooden stand. The spool projects above one of the finger-holes and the other finger-hole is left free, for this machine could not only sew but cut as well, the scissors that form the design being actual scissors" (Pearsall, 1973, pp. 27-28).

Due to the fashion trends of the mid-nineteenth century, many sewing machine companies developed and patented attachments for tucking, ruffling, pleating, cording, and braiding. One of the first such attachments, patented in 1853 by Harry Sweet, was described as a binder attachment "used to stitch a special binding edge to the fabric" (Cooper, 1976, p. 62). It was followed a year later by a hemmer attachment and an inept zigzag machine. By 1856, a special buttonhole attachment had been designed for standard machines but, despite the

developments in buttonhole machines and attachments, a fully automated and practical buttonholer was not invented until 1881 (Godfrey, 1982, p. 129). Meanwhile other features, such as bobbin winders (1862) and braid guides (1871) were added to the list of capabilities.

Magazine circulation spread rapidly during the nineteenth century, tempting women with their sewing machine articles. One of the earliest descriptions of a sewing machine appeared in Godey's (1854, p. 127):

> The sewing-machine, of which a representation is now given, is about twelve inches square, and is driven by a wheel at the end of a main shaft which passes through the machine. The wheel can be driven either by the hand, foot, or steam-engine.... The machine is capable of stitching every part of any garment, except the buttons and button-holes, whether the work be light or heavy, coarse or fine.... It is so simple in its construction and action that it may be worked by a child, and will sew a circle, curve, or turn a square corner, equally well as a straight line.... By the action of a screen in the machine, the stitch can be either lengthened or shortened as may be desired. The machine feeds itself with both cloth and thread, and it is only necessary for the operator to guide the material to the needle to sew. It will with ease sew a yard per minute, stronger, more uniform, and consequently better than it is possible to be done by hand.

Another article claimed in the same journal to illustrate the amount of income that could be generated from owning a Wheeler and Wilson sewing machine:

> Example For the Ladies. — Mrs. Mary R. Hubbard, Troy, N.Y. earned with a Wheeler & Wilson in 1868, $731.47; stitching 31,092 shirt fronts, equal to 886,122 feet of seam. At 20 stitches to the inch, this would give 212,669,280, an average of 708,891 per day, 88,612 per hour, and 1477 per minute, or sixty times as fast as hand sewing. Sixty years in one! The machine has run three years by steam and three by foot-power without repair, and is as good as when bought. (Kunciov, 1971, p. 123)

Complaints occasionally appeared in Godey's from disgruntled

customers who considered the price of Singer sewing machines entirely too high, but admittedly preferred them over the Wheeler and Wilson machines (Kunciov, 1971, p. 70). Realizing the need for truly affordable machines, James Gibbs began production in 1859 on an inexpensive ($50) model which was only half the price charged by other machine companies (Pearsall, 1973, p. 23). The idea caught on quickly and soon several companies were producing poor quality, lightweight imitations. Among these were the 1863 Heyer's Pocket Sewing machine, the $5.00 'Fairy,' and the $10.00 'Gold Medal' of 1862. By 1863, the cost of machines had fallen to a price that many families could afford.

Sewing thread

It is possible, however, that the sewing machine would never have been such a success had it not been for improvements in cotton thread (Cooper, 1976, p. 64). Until 1850, cotton thread had primarily been a three-ply glazed yarn. It had a rather wiry texture, however, and demonstrated itself to be totally unsuitable for machine sewing. Furthermore, the yarns were far too weak to withstand the necessary machine tension. Improvements in thread began in 1850 with C. E. Bennett's six-ply cotton thread. Although far from perfect, Bennett's thread received a gold medal from the Fair of the American Institute. Not until the mid-1860s was a superior six-ply thread produced by twisting three two-ply yarns together. The two brothers responsible for this softer thread, George and William Clark, originally hailed from Paisley, Scotland and were third-generation manufacturers of cotton thread. It was the Clark's improvements in thread which made the sewing machine practical.

Cutting equipment

Band-knife As the Civil War came to a close, a fairly new (1859) invention entered the garment industry and required great strength to operate. It was a long cutting knife, called the "band-knife," adapted from the band-saw so that bulk layers of cloth could be cut at one time. Evidently, British clothing manufacturers began using both the sewing machine and the band-knife a little earlier than the American firms. With the gradual infusion of the band-knife into the apparel industry, men slowly began to infiltrate clothing factories and assume jobs previously held by women.

Scissors and shears Home sewers, however, had to be content with their simple cutting shears. Of the variety available to them, cast iron shears ranked among the worst. The brittleness of cast iron, plus its tendency to lose a sharp edge, made it a very poor grade for scissors (Souder, 1922, p. 6). Although many other types of metal were used, two types of steel worked particularly well for shears. The first one, forged steel, came only from Europe, and due to its weight, was predominantly used for smaller shears. United States' factories, on the other hand, produced laid steel. First manufactured in Newark, New Jersey during the 1840s, laid steel shears were typically the heavy duty variety (Souder, 1922, p. 17).

Pinking-machines Only one advertisement for pinking-machines was found:

> Pinking-machines are sold at any house-furnishings store. An iron of each of the different patterns costs fifty cents. Saw-teeth notches are most fashionable. The mallet and block are fifty cents in addition. A flat-iron and hammer answer as well. (Harper's Bazar, 1869, p. 286)

Scissors gauge In order to solve the problem of crooked cutting of garment pieces, Mme. Demorest proposed her latest invention. "Among the new inventions is a scissor gauge, invented by Mme. Demorest. It is a neat little affair to slip on a pair of scissors to insure the straight cutting of bands and trimmings" (Godey's, March 1866).

Pressing equipment

Flat irons Pressing with heated or charcoal filled flat irons was a nasty, time-consuming task for pioneer women. In order to ease the drudgery and speed the process along, most households owned at least two irons. That way, the woman could be using one iron while heating another.

Although many women probably avoided ironing as they sewed, fashion periodicals did advise them to press for a more professional look. One article that appeared in Godey's (1854, p. 422), for example, announced that the tailor's secret for neatly made clothes was to press open all seams before inserting the lining, and it should be done on both sides of a dampened seam.

Fluting irons In addition to flat irons, other types with ridged and fluted surfaces that produce various pleated designs for ruffles and trims were also available. These came in a variety of styles, as described in Godey's (August 1865):

> Fluted ruffles are exceedingly popular.... The objection to fluted ruffles is, that they generally necessitate the skill of a French laundress, and consequently the expense is very great. This, however, need not be, if one is willing to take a little trouble; and for the benefit of the ladies we will mention the different styles of fluting irons brought out for their use. First, there are the three-pronged fluting scissors, then scissors with two very thick

> prongs or rods, used most especially for the wide ruffles on petticoats. Another kind is called the Italian iron, and consists of a hollow tube about six inches long, mounted on a stand. In this tube you run a heated rod, and form the flutes of the ruffles by stretching the muslin over the tube which is heated by the inside rod. A very nice little affair has been invented which shuts up in a box, and is found very convenient for travelling. It consists of three fluting rods with a lamp attached which keeps them always heated. A string with stirrup is fastened to these rods, the machine is screwed to a table, the foot is put in the stirrup, working it up and down very much like the treadle of a sewing machine. The ruffles are passed through these rods, making most beautiful even flutes. (p. 185).

The ruffler most frequently seen at the museums in this study, however, had an 1866 patent date stamped across the bottom plate, with 'Geneva' inscribed across the top iron.

Fasteners

Since snap fasteners were not invented until the turn of the twentieth century (Souder, 1922, p. 121), there remained basically three types of garment closures (excluding pins) available to women during the 1860s: (1) hooks and eyes, (2) lacings, and (3) buttons and buttonholes. Of the three, lacings were used the least and reserved mainly for evening dress. Godey's had recommended them quite heartily just a decade earlier when pointed back evening corsages were popular:

> The back of the corsage has also a point, which many wear quite deep. We would commend the present fashion of lacing the corsage of an evening-dress, as it gives the figure much more to advantage than the compression of hooks and eyes, but it is too troublesome for a walking-dress. (Godey's, 1851, p. 336)

Hooks and eyes The hook and eye fastener could hardly be called a novel invention of the nineteenth century, since its history can be traced as far back as the fourteenth century when it was called the

"crochet and loop" (Souder, 1922, p. 120). Nevertheless, tremendous strides were made in its production and design during the nineteenth century which merit mention.

Charles Atwood and Elisha C. Savage received the first two patents for handcrafted brass and iron hooks and eyes in the early 1840s. The brass variety was by far the smoother, stronger, and more rustproof of the two, but unfortunately cost about twice as much as the iron ones (Souder, 1922, p. 117). Both hooks, however, lacked the proper engineering to stay closed, thereby requiring the fabric to be under a small amount of tension. Ultimately, hooks and eyes (at least of the early 1860s) were really only useful for snugly fitted styles. In 1862, however, Mme. Demorest advertised a revolutionary hook and eye that did not come unhooked.

> Their peculiarity consists in a simple arrangement of one end of the wire forming a tongue or spring having a projecting curve under the hook, that allows the eye to easily slip over it, both in hooking and unhooking, without requiring any attention or variation in the usual method, and without the possibility of failure or annoyance. The sizes are numbered, and are also sewed on the same as the common kind. They are sold at about the same prices as the common kind, and their peculiar merits are easily understood. (Godey's, March 1862, p. 290)

Despite the obvious advantages of the 'Eagle Talon Hooks and Eyes,' it is not known how quickly they were adopted. Furthermore, none of the original hooks on garments in this study had the spring hump.

Buttons The button industry came into existence quite early in the United States. While some buttons (e.g., vegetable ivory) had to be imported from Europe, the Colonists were carving buttons out of wood. Then in 1812, horn buttons came on the market, followed

in 1855 by ocean pearl buttons. Also available were porcelain and crochet (or fabric) covered buttons. One very popular type of button produced in the United States during the 1860s was the "composition button." As the name implies, several different materials were used, ordinarily beginning with a foundation of either lime or asbestos. Added to that were various chemicals and dyes; ingredients were then held together with a gum-like substance. Following that, the mixture was rolled out, cut into buttons, and filed smooth (Souder, 1922, p. 157).

Paper patterns

Before the invention of paper patterns, women hesitated to draft their own garments. Rather than try to draft new patterns, they quite commonly took apart old garments and used the pieces as patterns for new ones (Hooper, 1976, p. 27). No one knows for certain who invented the first paper pattern, but there is abundant evidence to indicate that patterns were in existence in England as early as the 1830s. One English paper pattern warehouse, for example, advertised in March 1831 for its full size millinery and dress patterns (i.e., pelisses, dresses, bonnets, and caps). Another merchant announced in October 1836 that:

> Mrs. Hobson solicits an early inspection of her French Paper Models, comprising a very superior and extensive display of Real Fashions, selected from the newest designs for Cloaks, Bonnets, Caps, Dresses, new Sleeves, Capes, with every new pattern as they appear, at 8/-set of four articles, and 15/-for two sets of eight articles, packed in a box charged 3/-and forwarded to any part of the Kingdom. (Adburgham, 1981, p. 41)

Then in August 1850, a major step revolutionized the demand for paper patterns. The English women's periodical, World of Fashion, began to insert supplementary paper patterns into each monthly issue. The

pattern insert was actually composed of several garment patterns superimposed on one large piece of tissue paper, each garment having its own distinct set of lines. A dressmaker had only to trace the necessary pieces onto separate paper. Among the items popularly featured were embroideries, trimmings, capes, collars, undergarments, sleeves, bodices, caps, and dresses for morning, evening, and balls (Adburgham, 1981, p. 114). Furthermore, subscribers paid no extra charge for the paper pattern inserts; the magazine's price remained fixed at one shilling.

Other English fashion magazines soon copied the idea of pattern supplements. In 1860, for instance, Samuel and Isabella Beeton arranged to include patterns in their Englishwomen's Domestic Magazine. To supply them with the latest in Parisian fashions, the Beetons secured the aid of Adophe Gouband of Paris. The idea was such a tremendous success that the Beetons began putting patterns in their newest publication, The Young Englishwoman (Adburgham, 1981, p. 118).

Although the English initiated the pattern supplement, it was not long before American publishers caught on and improved upon it. In 1860, Ellen and William Jennings Demorest founded the Mirror of Fashion. Rather than insert miniature pattern diagrams, as Godey's and Peterson's did, the Demorests chose instead to include full-scale paper patterns. The full-scale patterns were warmly received, and by 1863, circulation of the magazine reached 60,000. At the close of the Civil War, with 300 agents to distribute their purveyor of fashion, the Demorests decided to rename the magazine Demorest's Illustrated Monthly and Mme. Demorest's Mirror of Fashions (Haack, 1979, p. 35).

Although the demand for full-scale patterns remained unwavering, seamstresses were still burdened with the problem of adjusting the size. Around 1863, Ebenezer Butterick, a Massachusetts tailor, developed the first sized paper pattern business. Butterick (like Singer) had a keen sense of business, so that by 1871, he was selling six million patterns a year. (Seven years after Butterick began pattern production, another tailor, James McCall, started manufacturing similar patterns. At first, his patterns were for such small items as fancy aprons, but soon he diversified into wraps and dresses as well.)

Miscellaneous tools and notions

Although not much has been written about sewing notions and smaller sewing tools of the 1860s, a search through advertisements at the back of periodicals revealed some interesting clues as to what was available. Items found in this manner include copying wheels, seam rippers, needle threaders, wire stiffening for fluted trims. Also advertised were dress shields.

Dress shields "We must call attention to the admirable dress shields just brought out by Mme. Demorest. They are of a new material, perfectly impervious to moisture, and resemble a creamy white muslin. They are very thin, and have not the disagreeable odor of India rubber" (Godey's, 1863, p. 198). These Excelsior Dress Shields, "which may be applied in an instant, are taken in and out without any trouble" (Godey's, 1864, p. 80).

Summary

Midwestern women of the 1860s had some unique opportunities for expanding their clothing awareness which were denied to many of earlier decades. The railroad brought eastern magazines, brimming with tempting fashions, to rural women. Many advertisements reassured the readers that items which could not be procured through local dry goods stores could always be ordered directly from the manufacturer. Even the Civil War did not cause as much severe deprivation in Iowa and Minnesota as might be expected.

Due to improvements in mass production, sewing machines of the 1860s were not nearly as costly as were those of the 1850s. Prices fell to within the range of many seamstresses. The practicality of the sewing machine was also increased as improvements were made in cotton thread.

Finally, the availability of paper patterns gave women the necessary confidence to sew newer, more complicated eastern fashions, rather than pick apart old garments.

CONSTRUCTION ADVICE IN FASHION PERIODICALS

According to Carter (1954, p. 27), women's magazines of the nineteenth century helped narrow the social gap regarding dress by equipping middle class women with enough fashion illustrations and construction advice to sew their own garments. This part of my study examines the recommended construction techniques in magazines from the 1850s and 1860s to determine two things:

1. How detailed and frequent was the advice?
2. Was conflicting advice given?

Periodicals Examined

Although many women's periodicals were in existence during the mid-nineteenth century, only five were available for use in this study: (1) Godey's Lady's Book (Godey's), (2) Harper's Bazar (Harper's), (3) Ladies' Repository, (4) Peterson's Magazine (Peterson's), and (5) The Prairie Farmer. Accurate circulation figures for these magazines, however, are difficult to determine, since according to Haack (1979, p. 14), publishers often exaggerated their circulation numbers. Clues to a magazine's regional availability, however, may often be found in printed letters to the editor. One Iowa woman, for instance, wrote:

> When times are hard and war is about throughout the land, homes seem lonely and cheerless; then all times we hail with delight the coming of an expected friend, who will at once amuse, instruct, and entertain, a combination of qualities rarely met with. And I think I can bestow no

> greater praise on the Lady's Book than this: we have selected it as that friend.
>
> Mrs. W., Iowa
> (Godey's, 1862, p. 511)

Godey's Lady's Book

Of all the American fashion periodicals in the nineteenth century, Godey's Lady's Book was the first to reach national prominence. Shenoi's study (1967, p. 49) of Minnesota dress found that even as early as 1840, Godey's was reaching Minnesotans. Sarah Josepha Hale (editor of Godey's) estimated in 1861 that, of Godey's 150,000 magazine subscriptions, each copy was passed to at least five people (Finley, 1931, p. 177). Unfortunately, almost one-third of Godey's readers lived in southern states. This caused some problems during the Civil War, since mail service in the South became unreliable (Finley, 1931, p. 177). After 1865, however, the demand revived quickly. Much of the magazine's success may be attributed to the colorful fashion engravings that appeared each month, along with suggestions for fabric, trim, and construction.

Harper's Bazar

What began during the 1850s as a regular fashion feature in Harper's Monthly developed into another popular fashion magazine in 1867, called Harper's Bazar. Harper's competed directly with Godey's and presented very similar content, including short stories, novels, poetry, needlecraft, news from abroad, and fashions from Paris. In addition, Harper's contained an abundance of fashion illustrations. These became an attractive feature of the magazine and were usually

accompanied by recommendations for fabrics, trims, and (occasionally) construction.

The Prairie Farmer and Peterson's Magazine

The Prairie Farmer and Peterson's Magazine also contained some fashion illustrations, along with instructions for needlecrafts and plain and fancy sewing. Both magazines, however, were targeted at less wealthy customers than those of Godey's and Harper's; hence, many of the fashion articles were designed to help thrifty women remake older garments. However, The Prairie Farmer did not yield much information since it was actually an agricultural periodical.

Ladies' Repository

Of the five periodicals used in this study, Ladies' Repository provided the least in fashion advice. This was due, in part, to the religious nature of the magazine and its mission to curb fanatic display. Of the few fashion articles that did appear, only healthful and sensible dress was encouraged.

Levels of Construction Advice

After the five magazines were reviewed, I discovered that the construction advice contained in them was presented at a variety of levels.

Level 1

Some advice, for instance, was located amid design descriptions of garments and generally was associated with the design elements of those garments. Many dresses, for example, were described as having "pinked"

flounces or ruchings. In other cases, skirts were described as either "gored" or "straight" (indicating the grain), rather than identified as "flared" or "bouffant." Although this type of information was not of a detailed "how to" nature, it does indicate that construction terminology sometimes replaced design terminology. One way to distinguish design terminology from that of construction is to analyze the cause and effect. Gores, for example, are used to achieve flare; flare is not used to achieve gores. Similarly, a saw-tooth edged flounce is the result of pinking; a pinked flounce is not the result of a saw-toothed edge.

Level 2

Slightly more detailed in construction advice were the accompanying instructions to pattern inserts. During the 1860s, reduced one-page patterns became a regular feature in many magazines. The instructions to these patterns, while they did provide some information as to the assembly of the pattern pieces, offered very little additional information.

Level 3

Another source of construction advice was the question-answer section of magazines where readers could write in their problems and queries. Harper's Bazar's feature entitled "Answers to Correspondents" was particularly full of sewing hints.

Level 4

The most extensive and detailed sewing advice appeared rather sporadically in both Godey's and Harper's. Apparently, the editor of Godey's considered the instruction of "plain work" a responsibility of mothers, and not something to be learned from a book.

> An article of practical instructions in the art of plain-sewing... will be given from time to time. It is a great pity that this knowledge has, in most cases, to be acquired by the married woman. We think it should be considered an essential part of the education of the daughter. All the pages of instruction that may be written or read upon the subject, can never give that aptitude... which would be acquired by seeing how others do it, and being taught while young to take a part in the operation. (Godey's, 1854, p. 460)

Such sentiments, however, did not impede the promotion of Godey's 25 cent pamphlet, How to Make a Dress (Godey's, 1860, p. 90). However, this pamphlet was not located for this study.

Level 5

The final level of construction advice addressed the fashion concerns of thrifty women with instructions for the remaking and updating of older garments. One particular article, "Dress under difficulties; or Passages from the blockade experience of rebel women," appeared in Godey's (1866, p. 32) just following the Civil War. The article was written by a southern woman, and it described how rebel women survived the Yankee blockade of goods by rejuvenating their old dresses.

It is also worth noting that some of the articles stressing thrift were reprinted years later, despite changes in style. For example, one article entitled "The economics of clothing and dress" first appeared in Godey's in 1854 (pp. 421-422), then reappeared, without modification, eight years later.

Construction Advice

The following construction advice has been arranged in the same sequence as it appeared in articles of the 1860s. Where conflicting information was given, I have noted this fact.

Taking measurements

To begin, a properly made garment had to have an accurate fit. Therefore, it was imperative that the seamstress take very exact measurements. Methods previously used to fit garments required clients to "submit to be pinned up in a newspaper, and, in terror and torture, gagged here and there, under the pretence of being 'cut out'" (Godey's, 1862, p. 407). An easier and more scientific method, developed in the 1850s by Mme. Demorest, required only four measurements to be taken: (1) shoulder (and armscye circumference), (2) length of waist, (3) bust, and (4) waist.

> Lay on the table a large sheet of stiff white or brown paper, and upon it lay the model.... Then, taking a tape measure in the... left hand, make the person to be measured stand straight up, with her back toward you.
>
> Commence by placing the end of the tape at the bone of the neck, bringing it down under the right arm, closely, and round up over the top of the shoulder, until it meets at the same point where it begun.... Hold the tape to the same place again, measure down the length of the waist, allowing half an inch for what it will take up in making.... Now place the measure across the fullest part of the bust, drawing it round under the arms loosely, so as to give freedom to the chest, and allowing an inch for padding, if it is desirable.... Last, take the measure tightly round the waist. (Godey's, 1862, p. 407)

It is quite possible, however, that many women were not completely satisfied with the fit produced by only four measurements, because just

seven years later, Harper's Bazar (1869, p. 564) offered some slightly different advice. First, instead of measuring the shoulder and armscye, women were instructed to measure the circumference of the chest running the tape just under the arms and over the fullest part of the bust. Widths of the front and back upper chest were then measured across from armscye to armscye. Shoulder seams were measured from the base of the neck to the sleeve cap and did not include the armscye circumference. Next, measurements were taken under the arm along the side seams to determine waist length. Using these four measurements (chest, upper chest width, shoulder, and waist length), the shape of the armscye was formed. Additional measurements included: (1) center front and back bodice lengths, (2) inside sleeve seam, (3) waist circumference, and (4) front, side and back skirt lengths.

Many of the changes in measurement, particularly of the shoulder and armscye, may be due, in part, to corresponding changes in style. What was appropriate for sloping shoulders early in the 1860s may not have been appropriate for a more normally positioned armscye later in the decade. In 1869, for instance, Harper's Bazar explained:

> That fashionably-made corsages show the figure in its natural and beautiful proportions, the seams of the corsage following as closely as may be the outlines of the figure. For instance: shoulder seams are placed on the shoulder, not back of it, as was formerly the case; the shoulders do not extend over the arm, but are short enough to make the arm-hole in its appropriate place; there is no attempt to make the back look narrower by placing the side seam behind the arm instead of under it. (1869, p. 563)

Selection and treatment of fabrics

The amount of fabric required to make a dress varied tremendously according to: (1) the type and width of the fabric, (2) the desired amount of fullness in the skirt, and (3) the desired length of the train. Some skirts, such as the one mentioned in Godey's (1861, p. 91), reached circumferences of eleven yards. And in extreme cases (especially ball-dresses), five or six times that amount might be used.

> Plain tarlatan, either white or colored, is sold for from fifty to seventy-five cents a yard. It is a yard and three-quarters wide, and there are sixteen yards in a piece. Modistes say they frequently use two and even three whole pieces for a dress, and that it is not uncommon to use sixty yards of tulle in making a puffed trained ball-dress. (Harper's Bazar, 1869, p. 51)

Still, women were reassured that it was possible to sew very fashionable demi-trained gowns with only nine yards of fabric (Harper's Bazar, 1869, p. 19).

Peterson's (1854, p. 379) advised women to purchase an extra one or two yards of material so that later modifications could be made to the body or sleeves of a dress. Furthermore, if a fabric was checked, plaid, or striped, extra was needed to match pieces.

> Checked circulars (mantles) should be cut with great precision, and care should be taken to match the plaid when sewing them up the back, otherwise the effect will be very irregular and distressing to the eye. (Peterson's, 1864, p. 89)

In addition to fashion fabrics, periodicals of the 1850s and 1860s also suggested suitable fabrics for the lining and underling of garments.

> Satin jean and ordinary twilled cotton are the materials most often used for dress linings. They are durable and firm, consequently they wear well, and do not stretch out of shape. Linen is also used, but it is elastic, soon shows soil, and is objectionable on account of the chilled feeling it gives the wearer when it is first put on. White

> lining is used for all dresses with light grounds. Dark drab and gray for thick colored materials.... Modistes prefer silk linings to all others as they fit to the figure more smoothly.... (Harper's Bazar, 1869, p. 563)

The type of lining used, however, was dependent upon the style and fabric of a garment. Light quality silks and poplins, for instance, were best lined with "paper muslin" (Harper's Bazar, 1869, p. 259). On the other hand, gored skirts of thin materials should never be lined (Harper's Bazar, 1869, p. 350). Nevertheless, the general rule for lining dresses seems to have been: "A light thin lining is better to use than a heavy one. For skirts, the lining should not be harsh or hard, as it wears out the dress quicker (sic)" (Godey's, 1858, p. 37).

Some fabrics, such as printed piques, merinoes, and good silks, did not require a lining. Even calico dresses "should not be lined, as the lining and outside shrink differently when washed, making the seams look drawn and puckered" (Harper's Bazar, 1869, p. 83). One fashion columnist for Godey's even claimed that, "Dresses never hang so well as when there is no lining in the skirt," but then quickly added that, owing to the cold climate, women were "frequently compelled to resort to almost ugly means to attain our end" (1858, p. 37).

Since, therefore, lining was often a necessity for warmth, yet shrank miserably in the wash, a special precaution was recommended.

> It is always advisable that muslin should be well soaked in cold water before being made up; it is easier to work upon, and you can then cut out anything to the exact pattern, without allowing for shrinking. (Godey's, 1868, p. 190)

Furthermore, by adding an ounce of alum or sal-ammoniac to the last rinse water, cottons and muslins could be made temporarily fire retardant (Godey's, 1860, p. 479).

Cutting out the garments

In 1860, Peterson's Magazine presented its readers with a very standard pattern for a two-dart bodice. Featured in the basic top, and retained throughout most of the 1860s, were: (1) back princess seams, (2) fitted sleeves, and (3) a center front opening. Before cutting out the bodice, however, Godey's recommended that the seamstress measure and tear off the material for the skirt (1851, p. 192). That way it would be easier to calculate the amount of remaining fabric for sleeves and trim.

Measuring off the skirt Unlike bodices of the 1860s, skirts went through some dramatic changes. Early in the decade, periodicals described skirts as being torn into plain widths. Eventually, however, a smoother, more flared skirt came into fashion which required the use of gored panels. I must mention, however, that rarely were skirts made entirely of gores. Generally, the gores were used in combination with straight widths. For instance, Godey's (1864) suggested:

> Have the front breadth plain; then a gore on each side, the straight side of each against the breadth; then two gores one each side these, the plain part of each gore coming against the plain side of the second gore on each side against the gored part of the first of the two gores. Then comes the back breadth, the gored sides of the two gores coming against the straight sides of this plain breadth. (p. 556)

This style was particularly recommended for skirts of lawn or muslin (Godey's, 1866, p. 185).

When cutting a trained skirt, Godey's advised, "The train should be cut on the bottom of the skirt, the side and front breadths gored, the back ones plain" (1869, p. 474). Only a year later, however, Harper's Bazar described a trained skirt that had "a sloped front

breadth, three narrow gored ones on each side, and two full widths behind" (1868, p. 243).

Throughout the 1860s, fashion columnists advised women against goring the back skirt panel(s) because it would cause the skirt not to hang well. Furthermore, they warned that gored breadths should never be pieced at the bottom. Instead, one should "design the shape and number of gores with reference to the width of the material" (Harper's Bazar, 1868, p. 819).

Cutting the bodice To reduce the chances of error, hence of waste, it was paramount when cutting out the bodice of a dress to begin first with the lining fabric.

> In doing this double the material at half its width, and fasten the patterns with pins smoothly on the material; the back, which is always cut in one piece for a dress fastening in front, is laid along the middle on the straight edge of the material, which is folded over. (Harper's Bazar, 1869, p. 564)

Next, the front lining piece was laid on the bias and an extra 1" to 1-1/4" was added to each center front for a facing. With 1" to 3/4" allowed for side and shoulder seams, and 1/4" allowed for neck, waist, and armscye seams, the bodice was cut out and basted together for fitting. "Creasing the seams with your nail... rip them all open, and you are ready to fit the material of your dress to it" (Godey's, 1851, p. 192). The reader was then advised to sew a four inch piece of 2/5" wide linen tape vertically to the center back at the waist. This served as a casing for the center back stay.

Both lining and fashion fabrics were cut to exactly the same size;

then writers instructed women to baste the layers together before stitching seams and darts.

Common rules about plain sewing

In 1869, Harper's Bazar ran a special feature that outlined basic rules for plain sewing.

> The needle should be rather long and somewhat coarser than the thread used. The thread should be rather finer than the thread of the cloth, and never longer than from sixteen to twenty inches, except for gathering. A knot should never be made in the end, except for gathering or running, but the end should be left half an inch long, and sewed in with the hem or seam. (p. 728)

Also discussed were a variety of stitches suitable for hems, gathers, seams, and buttonholes. Those stitches suggested for seams and darts included: (1) the running stitch, (2) the backstitch, (3) the close backstitch (or stitched seam) which imitated the look of machine sewing, and (4) the overhand stitch. Seams which resulted from combinations of stitches were the felled seam and the double seam. Oddly enough, Harper's failed to mention both the overcast and buttonhole stitches as possible seam finishes. It did, however, praise the sewing machine as an invaluable tool for sewing bodices. "With the proper tension every seam in the entire corsage may be sewed more neatly and substantially by the machine than it could possibly be done by the fingers" (Harper's Bazar, 1869, p. 563).

Garment fastenings

Buttons and buttonholes Occasional contradictions appeared in magazines about the correct order of bodice construction. Several articles suggested that the seamstress begin by stitching the bust darts,

while others contended that it was easier to hem the center front facing 1" to 1-1/4" and work the buttonholes before stitching seams and darts. According to numerous articles, the proper direction of bodice closures was right over left, or buttonholes on the right front, buttons on the left. This information, however, is somewhat inconsistent with the illustrations of garments fastened in the opposite direction.

After the seamstress hemmed under the center front facing and worked the buttonholes, Harper's Bazar advised her to sew a narrow facing of the dress material beside the buttons. This narrow bodice extension prevented the white underclothes from showing through the buttonholes (1868, p. 818).

Center front facings on cloaks were sometimes constructed so that the buttons and buttonholes were hidden beneath the outer layer of the coat. To do this, the buttonholes were stitched onto a narrow strip of cloth. The cloth was then attached to the inside opening of the cloak and fastened down at the ends and the inner side. Only the front edge was left loose (Harper's Bazar, 1869, p. 565).

Some of the magazines featured illustrated instructions for making fancy buttonholes. These ranged from tatted and knotted openings, to very ornate herringbone and chainstitched types. Even the basic buttonhole stitch was not immune to intricate variations. But despite the wide assortment of buttonhole stitches, women were still advised to heed some standard buttonhole techniques. First, a thread was worked around the edge of the buttonhole with either a chainstitch or a running stitch. This technique, called 'barring,' was always done to stabilize the buttonhole region. Next, the buttonhole was cut and the edges of

the hole were loosely overcast (Harper's Bazar, 1869, p. 564). With that completed, the seamstress could begin working the buttonhole with any one of the many stitches, completing first the sides of the buttonhole before sewing the ends.

Among the details missing from descriptions, however, was information about the correct placement and orientation of buttonholes. Such detailed instructions were reserved more for the application of buttons.

> It is well to have the buttons set back about an inch from the edge, and placed an inch and a half apart from the throat to the waist, to prevent gaping. (Godey's, 1853, p. 568)

Furthermore, it was specifically recommended that if ball type buttons were used, they should be placed closer together to prevent gaping (Harper's Bazar, 1868, p. 499).

After the buttons were positioned, the seamstress was instructed to sew the buttons on, forming thread shanks.

> Lay the button on the designated place, and sew it on from the under side with coarse thread. Then run the needle out on the right side, wind the stitches six or eight times with the thread, and fasten the thread on the underside... the stitches must take up as little space as possible so as not to stretch the button-hole apart. (Harper's Bazar, 1869, (p. 564)

There were certain types of buttons, however (i.e., linen, woven, or crocheted), that allowed room for more creative application. Harper's Bazar (1869, p. 729), for instance, illustrated a fancy star pattern in the button stitchery.

One thing that influenced how a button was sewn on was the type of dress fabric used. Calico garments, for example, were best "made with a shank secured by a ring, so that they may be removed before

washing" (Harper's Bazar, 1869, p. 195). Furthermore, if a starched fabric was used, it was necessary to strengthen the button by placing a small piece of folded muslin directly beneath it. After the button was sewn to the garment, any protruding muslin was trimmed away (Harper's Bazar, 1867, p. 125).

Eyelets Buttons were not the only dress closures available to women of the 1860s. Eyelet lacings, which had been in use for centuries, continued to be used for the back closures of ball gowns.

> Low-necked waists are of late fastened again behind, in which case the backs are arranged for a cord. For doing this turn down the outside material an inch and a half on the under side, and prepare the double material for two round slender whalebones.... Then work the intervening spaces with eyelets, after which run in the whalebones. (Harper's Bazar, 1869, p. 564)

Although no detailed information was given for the actual "sewing" of eyelets, an accompanying illustration showed an eyelet worked with a simple buttonhole stitch.

Hooks and eyes Another type of fastener used, and often in combination with buttons and buttonholes particularly at the waist, was the hook and eye. "Half a dozen hooks and eyes sewed on the belt and above it relieve the button-holes from a strain at the waist" (Harper's Bazar, 1868, p. 818). The use of hooks and eyes in combination with just ornamental buttons, however, was a matter of deep debate among fashion columnists. Peterson's (1868, p. 230), for instance, described the typical plain bodice as having a row of decorative buttons down the front which did not fasten closed. Instead, long hooks and eyes were sewn underneath. Disapproval came strong from one Harper's Bazar columnist who contended that "Nothing gives a dress so

unfinished an appearance as buttons set on without holes" (1869, p. 158). Magazines were even a little inconsistent in their own advice. For example, Harper's advised women in September 1869 that "Buttons should not be set on the waist of a dress merely for ornament. They are for use, not show, and require buttonholes opposite to make them effective" (p. 563). Then, just one month later, it instructed women to "Sew hooks on the under and buttons on the upper side, which latter serve only as ornaments" (1869, p. 673).

Only one article appeared with specific instructions for the application of hooks and eyes.

> Sew the eyes to an under strip (made of outside and lining)... and stitch the strip on the left front in such a manner as to cover the place where the eye was set on. Sew the hooks on the hem of the right front... in doing which fasten both layers of the lining, but leave the outside material alone. Then hem down the outside, and run the points of the hooks through it. (Harper's Bazar, 1869, p. 564)

The accompanying illustration showed one hook and eye, each stitched through the pair of holes supplied, and then anchored in the middle with additional stitches.

Darts

After the seamstress hemmed the bodice opening and worked the buttonholes, magazines next instructed her to backstitch the bodice darts. As a general rule, two darts were used. They were slightly shorter than darts of earlier periods "but taken deep, to make an easy tapering shape" (Harper's Bazar, 1869, p. 259). According to Harper's, many tailors used just single darts, but they ended rather abruptly and did not always give proper fullness to the bust (1868, p. 498).

Some French-made dresses used three darts on each side, but Harper's considered two darts generally sufficient.

As for the positioning of darts, Godey's advised that the first dart "should be about one inch and a quarter from the line of the front, at a slope of two and a half inches" (1862, p. 407). The second dart should then be made parallel to the first.

After a dart was stitched, the excess seam was trimmed to a third of an inch, bound with silk or linen tape, and hemmed to the bodice lining.

Bloused waists

Not to be overlooked was another type of bodice called the blouse waist. Typically, the lower edge of the bodice was gathered onto a "belt," or dress waistband. Some magazine columnists occasionally referred to it as the "infant" waist. Although not much information was written about its construction, Harper's (1869, p. 563) did suggest that it could easily be made from the pattern of a darted tight waist simply by omitting the dart seams and gathering the fullness onto a belt.

Bodice side and princess seam

Both side pieces were then lapped onto the bodice back forming two so-called "princess seams" that were spaced an inch apart at the center back. Women were told to carefully backstitch the seams from the outside, letting the stitches show, rather than hide them on the inside of the garment (Harper's Bazar, 1868, p. 377).

Next, the side panel was joined to the bodice front with a normal

(hidden) backstitched seam. Harper's instructed women to press open the side seams and bind each side of the allowance separately with tape (1869, p. 673).

Boning

Despite the fact that whalebone corsets were worn beneath dresses during the 1860s, it was customary to incorporate some stays into the various structural seams of the bodice. According to numerous fashion articles of the period, the most frequent placement of boning occurred at the side seams and darts, with occasional boning encased at the center back or along a center back eyelet opening. The technique prescribed for boning at the side seams and darts, however, conflicted directly with the recommended seam finish (pressed and bound with tape).

> Run, about two-fifths of an inch from the seam, the back edge of the seam of the side pieces and the back edge of the seam of the fronts, taking care not to put the needle through the outside material; the other sides of the seams must previously have been cut away to the width of two-fifths of an inch.... In the space thus formed, and in the spaces which must be made in like manner in the darts, and also in that formed by the tape on the back, run in whalebones which must be furnished with holes at the ends, and carefully fastened.... (Harper's Bazar, 1869, p. 564)

When inserting the stays, Godey's (1853, p. 568) cautioned that very stiff whalebones created a very unpleasing effect. To alleviate the problem, it recommended one French dressmaker's secret of splitting the whalebones as thin as possible before inserting them.

Wadding or padding

In order to increase and enhance the appearance of the bust, many periodicals suggested the use of cotton or wool padding. Peterson's

for example, disclosed that the secret to the superior fit of riding habits on the majority of young lady equestrians was the incredible amount of padding in them (1868, p. 230). Godey's stated that cotton wadding was even used on mantuas to correct figure deformities such as crooked shoulders (1853, p. 477). The magazine later added that no matter which part of a wrap was to be padded, the seamstress should follow some simple rules.

> Quilt the wadding on dimet before laying it in the cloth -- the dimet, not the wadding, going next to the cloth. Unless this is done, the fluff will work its way through the finest and coarsest cloth, or even through velvet, and will give both materials a dusty look.... (Godey's, 1858, p. 97)

Harper's (1868, p. 193) also suggested that the wadding be thinned out a little along the seams of a garment.

Shoulder seams

Information regarding the construction of shoulder seams was extremely sparse. Only two references were found, and both of them from Harper's Bazar. The first article (1869, p. 563) stated that shoulder seams were no longer corded, indicating that perhaps it was once a common construction technique. The second article prescribed a lapped method of construction.

> In the shoulder-seams of a dress the front should be laid on the back and stitched outside, the seam being turned toward the front. (Harper's Bazar, 1869, p. 462)

Waist cording

Harper's outlined a method for cording bodice hems, after the shoulder seams were sewn.

> The cord is either run in a bias strip of the material an inch wide, or in silk which corresponds to it.... Sew this cord on the right side of the waist, backstitching close to the cord in a manner that the edge of the cording extends about two-fifths of an inch beyond the edge of the waist; this is then hemmed down on the wrong side... so that the cord forms the edge of the waist, and the stitches are not visible on the right side. (1869, p. 565)

Two illustrations also accompanied the directions. One showed a single row of bias cording, while the other showed a double row. The article further explained that double cording was especially used for edging mantillas and dresses, but required the bias strip to be an inch and a half wide instead of an inch. Yet another article, just two pages before this one, suggested that in certain cases the cord should be left out of the bias strip since it may draw (Harper's Bazar, 1869, p. 563).

Necklines and collars

Most periodicals of the 1860s described necklines as cut plain and corded along the edge in much the same manner as at the waist. But there was another fashion movement during the decade to replace the corded neckline with a half inch standing band collar.

> For the benefit of amateur dressmakers.... Instead of cording round the top as heretofore, a small band, of the same material as the dress, is arranged in the same manner as the strap which attaches the collar to a habit-shirt. This band being cut separately, and then joined on to the high bodice, will be found easier to fit neatly round the throat than when the bodice is simply corded round the top. (Peterson's, 1863, p. 315)

Two months later, Peterson's again praised the band collar, adding that when worn combined with a fine lace collar, it resembled a neck ribbon (1863, p. 483).

Preparation of the armscye

Cording According to Harper's (1869, p. 563), and supported by numerous garment descriptions in other periodicals, armholes were always corded before sleeves were set in. However, only Harper's offered a brief description of how it was sewn on.

> Cord the arm-hole around... with a cord, the edge of which must lie along the edge of the material of the waist, and the ends of which must extend about a quarter of an inch over each other on the side seam of the waist. (1869, p. 565)

Dress-protectors Although commercially made dress-protectors (or shields) were available during the 1860s, Harper's contended that "a piece of chamois leather sewed in the arm-hole is the most efficient dress-protector" (1868, p. 947). Another article which appeared in the same magazine just two months later advised a different method for protecting calico dresses from perspiration stains. "Face the arm-holes and side seams with strong muslin" (Harper's Bazar, 1869, p. 83). Unfortunately, no further information was supplied.

Sleeves

Compared to the rest of the bodice, very little information was published about sleeve construction. I surmise that this was partly due to the more frequent style changes made in sleeves. The construction of one style of sleeve, however, did become nearly uniform during the 1860s. It was called the two-piece coat sleeve. When the dressmaker cut out the sleeve pieces, writers recommended that she cut the upper piece an inch and a half broader than the under piece, as well as a little longer. The shapes of the pieces were curved to smoothly fit a half bent arm. As the two pieces were sewn together, the longer

one was held toward the sewer. In that way, the extra length could be eased, or "fulled" into the under sleeve piece (Harper's Bazar, 1868, p. 643). This particular type of sleeve, however, was rather unpopular with dressmakers, as one article explained.

> In spite of continued efforts of the dressmakers to prevent it, the tight sleeve will certainly reign supreme after the summer months are past.... The dressmakers object to this sleeve, because of the absence of all trimming; in buying this last they always have their profit, and will not make a dress for which the trimming is brought to them. (Peterson's, 1859, p. 152)

When setting a sleeve into the corded armscye, Harper's advised sewers to hold the sleeve at the cap so that the fullness could be gradually "gathered" into the arm-hole (1869, p. 563). After she stitched the quarter inch deep armscye seams, the seamstress overcast the allowance to keep it from unraveling (Harper's Bazar, 1869, p. 565).

Skirt seams

After the bodice was completed, the seamstress was instructed to backstitch the skirt lengths together, taking special care to position the front panel so that both side seams fell over the front hips. Since the skirt required a slit type of opening, the seam on the left was left open 14 inches at the top. The right seam also had an opening, but the slit was much smaller and used instead for a pocket aperture. "The pocket is concealed beneath the opposite seam on the right side. Small fancy pouches are attached to the belt or made to hook on the corsage" (Harper's, 1868, p. 339). No further instruction was given for the pocket.

Certain fabrics required special care when skirt lengths were seamed together. For instance, in order to prevent seams from puckering on very firmly woven fabrics, such as some silks, Harper's (1869, p. 565) recommended that seam allowances which used selvage edges be clipped at three- or four-inch intervals. Black fabrics also required special care since sewing with black thread on black cloth was difficult to see.

> Pin or baste a strip of white paper on the seam... then sew through the paper and cloth, and when the seam is completed the paper may be torn off.... This method is well adapted for sewing machinery as well as by hand. (The Ladies' Repository, 1860, p. 501)

Seam allowances were then ordinarily finished with either an overcast stitch or a double seam.

Skirt hems

In contrast to the present-day idea that hemming is a final step in garment construction, 1860s skirts were hemmed at a very early stage of the operation. One obvious advantage of early hemming was the ease which which large quantities of flat fabric could be manipulated, as opposed to the same yardage of gathered or pleated fabric. Furthermore, it was not the purpose of the 1860 hem to adjust the skirt length, since that was almost always done at the waist with a turning.

> If it is too long... the skirt should be taken from the body, and sewed on again at the right length. (Godey's, 1862, p. 158)

This changed toward the end of the decade, however, when gored skirts came into fashion. Peterson's (1868) advised that "should any shortening or lengthening be required to suit an individual figure, it must be

allowed for at the bottom, and not at the top of the skirt" (p. 73). Throughout most of the decade, however, the length was adjusted at the waist and the major purpose of the hem was to add body to the skirt so that it would stand out away from the wearer. It was to this end that much of the hemming advice was given.

Generally, writers told the seamstress to form a hem facing out of a rather stiff foundation fabric, such as muslin, paper muslin, corded fabric, hair cloth, or crinoline. Even grass cloth and enameled leather were recommended (Godey's, 1863, p. 197). Also suggested was a special hair cloth facing, bound on each edge and stiffened with whalebone. Women were instructed to cut the facings deep (2" to 27") to give added body, the average size being nine inches. In addition, the hems could be weighted either with straw braid, a Parisian technique (Godey's, 1862, p. 210), or with shot inserted in the facing of the skirt. The use of shot, however, was discouraged toward the end of the decade.

> Habit-makers now are beginning to discard the good old plan of putting shot in the hems of skirts to weight them; ... but if a deep hem, say a quarter of a yard wide... is put on inside at the bottom of the skirt, it will answer nearly as well. (Peterson's, 1868, p. 230)

Of the five periodicals examined in this study, Harper's Bazar (1869) provided the most complete description of a faced skirt hem. First, it should be faced --

> ... with a strip of foundation muslin twelve inches wide, and a piece of the outside material four inches wide (the muslin stiffens the skirt and keeps the bottom clean). Next sew the strip of outside material to the foundation on the wrong side, and turn so that the seam lies inside... and the under edges come together. Then run this facing on the skirt, in doing which the right sides must come together; after which turn so that the seams lie inside... lay the skirt on a table, and turn up the foundation smoothly on the inside of

> the skirt. As the skirt is smaller above than below, the foundation must be sloped off at the seams and the ends joined. The foundation may also be cut in separate pieces from the skirt pattern, and sewed up like the skirt. In sewing on the foundation run the needle from right to left horizontally through the stuff, but work from left to right.... Bind the bottom with woolen or silk braid, which must be stitched down on the right side... and then hemmed down on the wrong side.... The skirt may also be edged with cord, which must be sewed on with overcast stitches. (p. 565)

But in certain cases, Harper's recommended that this method not be followed. If a calico skirt, for instance, "is sloped at the bottom do not hem or face it, but merely bind with worsted braid that has been scalded to prevent further shrinking" (1869, p. 83). The worsted braid that was mentioned, could be purchased in six-yard lengths for 12 cents a bunch. However, it was not recommended for gored dresses of very thin material, which were to be hemmed instead with a turned facing of the dress material (Harper's, 1869, p. 259).

Skirt placket openings

Next, a placket was formed at left seam opening. Unfortunately, only one reference was found that described just how the placket was constructed. The seamstress was told to set a narrow strip of fabric (one and a half inches wide) into the left side of the slit. The right side was then hemmed and positioned an inch over the placket strip (Harper's, 1869, p. 565). An alternate method was also mentioned, whereby "a piece may also be set on the side breadth, in which case an under piece is set on the back breadth, and the edge is not laid over on the under side" (Harper's, 1869, p. 565).

Bustle linings

Both Harper's (1869, p. 565) and Peterson's (1868, p. 320) reported the practice of many dressmakers to fit a 12 inch deep piece of muslin or lining fabric along the top edge of the skirt at the center back. When the piece was gathered in with the skirt, it formed a small built-in bustle.

Skirt pleating and gathering

Magazines advised sewers to turn down the top edge of the skirt before pleating or gathering it. The usual amount for a "top turning" was about an inch; however, Godey's (1858, p. 37) reported that many women turned down two or three inches with the expectation of future skirt lengthening. However, the magazine did not endorse this idea since the skirt was most likely to fade, and consequently the brighter turned down edge would not match the rest of the skirt.

Throughout the decade, numerous combinations of single, double, and triple box-pleats, knife pleats, and French gathers were used on skirts. So many, in fact, that Godey's insisted every seamstress had her own style of pleating and gathering. Out of the chaos, however, there did develop a few rather standard formulas, the most popular of which required skirts to remain plain or flatly pleated in the front, moderately pleated on the sides, and heavily pleated or gathered at the center back. However, the type of formula used was dictated by the dress fabric, and as a general rule, "dresses of silk or any heavy material have the skirt set on in large flat plaits, and those of transparent textures are set on in gathers" (Peterson's, 1854, p. 412).

Although the information in periodicals about skirt pleats was rather sparse, there seemed abundant information about gathers. One technique mentioned, which was especially recommended for very thin fabrics since it did not require "stroking," was called "gauging." It involved running two or three rows of basting thread, using alternating long and short stitches. The basting threads were then pulled simultaneously to form small even gathers (Harper's, 1869, p. 158). But for the majority of dress fabrics, Harper's (1869) advised the following technique.

> Pin the material to a cushion, make a knot in the thread at a distance from the edge... and gather by means of regular running stitches.... In order to make the gathers lie in the same direction, first push them close together, then hold them in the left hand, and with the needle in the right hand stroke perpendicularly along the stuff between every two gathers. (p. 728)

Then, to sew the skirt to the bodice, a stitch was taken through each gather.

One other type of gather recommended by Harper's (1869, p. 728), and formed as if making a tightly pulled hem, was the "rolled gather." The needle, however, entered from under the hem and was worked in a back to front direction. The rolled gather then had to be overseamed when it was attached to some part of the garment.

Attached versus separate skirts

Judging from the amount of conflicting information in magazines, there was no absolute rule about attaching skirts permanently to bodices, and it was really left to the discretion of each seamstress. On the one hand, women were reminded that by leaving the skirt separate,

it could be worn with other waists. On the other hand, a separate skirt required more thicknesses of fabric at the waist, which made it appear "clumsy" (Harper's, 1868, p. 819). Some writers argued that separate skirts gapped at the waist when the wearer moved. To combat the problem, they recommended that several hooks be sewn along the inside of the waistband, each with a corresponding eye along the edge of the waist (Harper's, 1869, p. 565). Another trick, particularly used on riding habits, was to sew a button just below the waistband, over each hip. The button was then fastened to a corresponding tab suspended from the bodice.

Looping skirts

Toward the end of the decade, dame fashion decreed that skirts should be ornamentally looped up in the back, and to keep their readers abreast of the latest styles, magazines offered various suggestions to accomplish this end. Some of the simpler designs required only that buttons and loops, or hooks and eyes, be sewn to the center back seam. A slightly more complicated design required a piece of elastic to be

> fastened inside the side breadths, about a quarter of a yard from the waist, with a hook attached to that on the one side, and an eye to that on the other. Just at the place where they are sewn the seam must be left unstitched for about an inch, so that when not used the pieces of elastic may be slipped inside the skirt; when, however, these are hooked together, they shorten the skirt sufficiently in front, and all the fullness at the back can be drawn through the loop. (Peterson's, 1868, p. 236)

Although some very ornamental means were used to loop skirts which employed brooches, bows, and ribbons (Godey's, 1868, p. 384), more often, functional apparatuses were used. For example, Harper's Bazar suggested

that tapes could then be tied behind the wearer to draw the skirt material toward the back (1869, p. 371). Still other writers proposed the use of tapes suspended from the waistband, as well as numerous drawstring arrangements.

Loops for hanging

Since hangers had not been developed, it was necessary to sew hook loops inside each garment. The loops were constructed out of one inch bias strips of fabric hemmed over a cord (Harper's, 1869, p. 565). Bodice loops were sewn to the inside of the armholes or at the waist. For skirts, two loops were applied to the back of the waistband, and wraps had one sewn to the inside center back, just below the collar (Godey's, 1860, p. 571).

Trims

Throughout the 1860s, numerous types of trim were used, and especially popular were the braids, fringes, ruches (pleated ruffles), and narrow flounces. Many of them were sold commercially by the yard, but magazines continued to instruct women how to make them at home. To begin, most ruffles were cut out on the bias, but that depended a great deal upon the type of fabric or the design on it. It was suggested, for instance, that checkered fabrics did not look good if they were cut bias. And most cotton fabrics, because of the difficulty of ironing, were not cut on the bias either. Silk, on the other hand, was suitable for both bias and straight cut trims.

The edges of the flounces and ruches were finished in a variety of ways. Some were simply hemmed by machine or bound with a contrasting

fabric. However, trims most frequently mentioned in periodicals had either "pinked-out" edges, or were unraveled to half an inch (Peterson's, 1869, p. 235). In addition, trims were sometimes sewn onto garments with cordings or half inch headings (Peterson's, 1867, p. 82).

As indicated by several of the periodicals in the study, it was not only acceptable to sew dress trims by machine, but it was the preferred method. Peterson's applauded the effect as both "neat" and "elegant" (1866, p. 232), while Harper's declared that "common-sense dictates a return to styles in which fingers shall no longer be obliged to do work which can be done by machines" (1869, p. 19). However, when it came to the application of pleated ruchings, little time was saved by the machine since the trim had to first be basted in place anyway (Harper's, 1869, p. 163).

Summary

Although only a handful of articles appeared with extensive construction information throughout the 1850s and 1860s, when combined with scattered information found in regular design descriptions, pattern inserts, questions to the editors, and helpful hints sections, an almost complete picture can be drawn of how garments were supposed to be constructed. Only a small amount of the information was conflicting, and generally it was due to the handling of different fabrics.

GARMENT FINDINGS

In order to test the relationship between construction techniques used on women's dresses and wraps during the 1860s and the variables of style, technology, published information, and fabric, I examined costumes from museums in Iowa, Minneapolis, and St. Paul. Of the 13 museums visited (see Appendix B), many of the larger costume collections appeared either in towns along the Mississippi River (i.e., Davenport, McGregor, and St. Paul), or in towns with access to railroads (i.e., Waterloo).

A total of 44 garments from the 1860s were examined. Twenty of the dresses appeared as attached bodices and skirts, seven as separated bodices and skirts, five as bodices without skirts, nine as wraps, and three as dresses with coordinated wraps (ensembles). Of the three ensembles, two had attached bodices and skirts, while the third had separate pieces.

Five other garments dated outside the 1860-1869 period were also added to the study since 1) the documented dates (e.g., weddings) were extremely close (within one or two years) to the 1860s, and 2) the styles appeared to be quite similar to those within the period. Many of the garments dated 1859, for instance, were probably worn well into the 1860s. Furthermore, the lag in fashion change may have been a couple of years, allowing urban styles of the late 1860s to have continued in Iowa during the early 1870s. (For a complete breakdown of the five garments' dates, refer to Table 2.) Hence, the total number of garments examined in this study was 49.

Table 2. Distribution of the examined garments

Garment type	Amount
Attached bodices & skirts	$n^1 = 20$
Separated bodices & skirts	$n^2 = 7$
Bodices alone	$n^3 = 5$
Ensembles (dresses with wraps)	$n^4 = 3$
Attached bodices & skirts (2)	
Separated bodices & skirts (1)	
Wraps	$n^5 = 9$
Capes (5)	
Dolman (1)	
Coats (2)	
Jacket (1)	
Total 1860s garments	44
Garments dated close to 1860s	$n^6 = 5$
Attached bodice & skirt (3) – 1858, 1859, 1859	
Separated bodice & skirt (1) – 1872	
Wrap (1) – 1859	
TOTAL	49

Organization of the Findings

Since the amount of published information regarding clothing construction was quite extensive during the 1860s, it is the first variable discussed in this chapter. The other three variables, 1) garment style, 2) technology, and 3) fabric, follow. Because construction techniques may, in some cases, relate to more than one variable (e.g., skirt pleating to both style and fabric), some techniques may be discussed more than once.

The Relationship of Construction Techniques to Published Information

The major purpose in examining women's fashion periodicals of the 1850s and 1860s was to accept or reject the null hypothesis that:

> the construction techniques prevalent in surviving dresses and wraps are not related to published information about the style and structure of women's dresses and wraps.

The 49 garments used in this study seem to indicate that, while some minor techniques went unobserved, sewers followed the majority of recommended techniques. However, since 1) most of the published information concerned the construction of dresses rather than wraps, 2) relatively few wraps were examined, and 3) of the wraps that were examined, there were several species (i.e., capes, coats, and jackets), most of the information in this section concerns the relationship between published information and the construction of dresses. Therefore, since not enough information on wraps was col-

lected to necessitate a separate section, the garment findings of wraps and dresses are discussed collectively.

Matching plaids and stripes

Periodicals reminded women to match plaids and stripes, and the findings of this study suggest that most women tried to do just that. Of the 10 plaid and two striped dresses that I examined, only one, a plaid dress, appeared to be totally unmatched at the back bodice, while another dress was only slightly unmatched. Unlike present-day standards for matching fabric designs, it appears that in the 1860s, only selected seams (primarily at the bodice back) were matched. Shoulder seams and armscyes, on the other hand, were almost ignored. For instance, three of the plaid dresses in this study were matched around the body, but left totally unmatched at the shoulder seams. These findings also suggest that, although women tried to heed the published advice, the instructions in magazines for matching fabric designs were not specific enough for women to follow and did not tell them where or how to match.

Lining

As recommended, most of the dresses in this study were lined in the bodice with either cambrics, muslins, twills, or old remnant calicoes. Only one, a cotton bodice, was left completely unlined. Eleven skirts were also left unlined (five cotton, three silk, and three wool). This seemed to be a particular trend among cotton garments and was recommended in periodicals.

One thing that was not mentioned, however, was the use of multiple lining fabrics within one garment. Two of the bodices,

for instance, each had three different kinds of lining. The majority of garments, however, were lined with only one fabric.

Especially popular as bodice linings were tan cambrics, glazed cottons, and cotton twills. (See Table 3 for distribution of dress lining fabrics.) The assorted glazed cottons and tan cambrics also made popular skirt linings. However, unlike bodice linings, skirts had no twill or muslin linings.

After women cut the lining and dress fabrics to the identical size, magazines advised them to baste the layers together before stitching any darts or seams. The fact that this was actually done is evident from the many garments which still had basting threads intact. In other cases, needle-holes remained where threads once were. Although the magazines referred to the technique as "lining," the fact that the layers acted as one makes that term inaccurate for present-day readers. In present vernacular, the correct term is "underlining." It refers to the collective seaming of two layers of fabric, whereas a lining is constructed independently of the outer layer of fabric and then sewn into it. According to this distinction, only two skirts and one overskirt were lined, compared to the 22 that were underlined.

Measuring off the skirt

Periodicals often mentioned the use of plain widths as pieces for skirts. This method not only reduced the amount of wasted fabric, but it also provided maximum use of selvages, thus saving the seamstress the bother of finishing seam allowances. So popular was this technique

Table 3. Bodice and skirt lining fabrics

Fabrics	Bodices	Skirts
Tan cambric	6	5
Brown cambric	1	3
White cambric	1	1
Tan twill	16	0
Brown twill	2	0
White twill	3	0
Muslin	3	0
Glazed cottons	9	14
Other	3	3

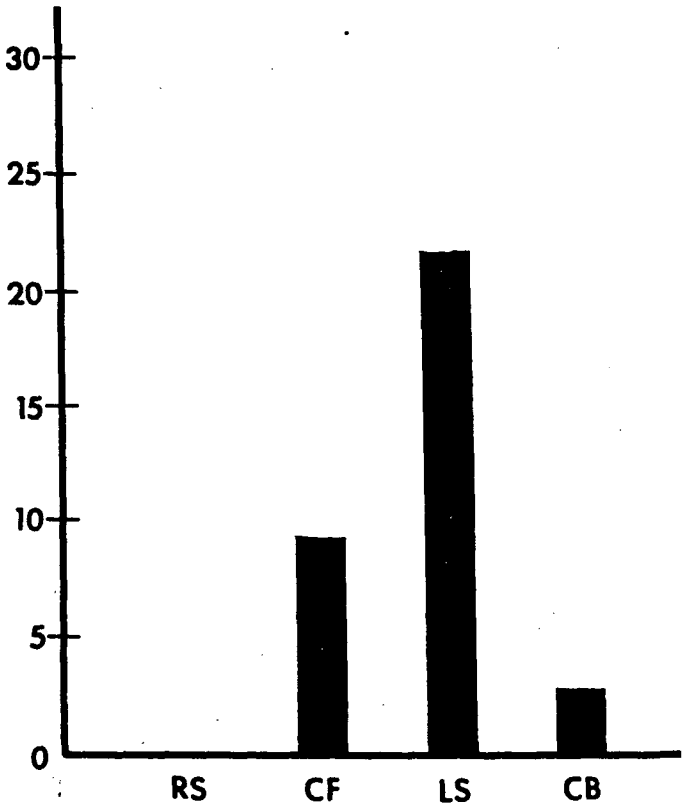
that 22 of the 34 skirts contained only selvage edges. Even as styles changed to include gored panels, seamstresses continued to use as many selvages as possible. In this study, only five skirts did not make use of at least one selvage edge.

Seaming the skirt

Magazines recommended two things to women when seaming up their skirts. First, they were told to leave an opening for the skirt at the left seam. Second, they were told to leave another smaller opening in the right seam for a pocket. Both of these recommendations were used extensively on garments in this study, and of the 34 skirts, 22 had openings in the left seam, nine had openings at the center front, and only three had openings at the center back. None of them opened at the right seam (see Figure 2).

As for the placement of pockets, 22 of the skirts had pockets in the right seam, while only one was found in the left seam (see Figure 3). Fifteen of the pockets were supported from the waistband of the skirt and, as advised in magazines, 16 of them had two-inch pocket facings of the dress fabric just inside the opening. Only one skirt had a pair of patch pockets applied to the front, and another had a peculiar small pocket set in the center back seam. Neither of these last two pockets were described in periodicals of the period.

Next, the seamstress was told to backstitch up the seams, clip the selvage allowances at four-inch intervals, and finish the allowances with either an overcast stitch or a double seam. However, none of the selvage allowances in this study were clipped, and only six skirts



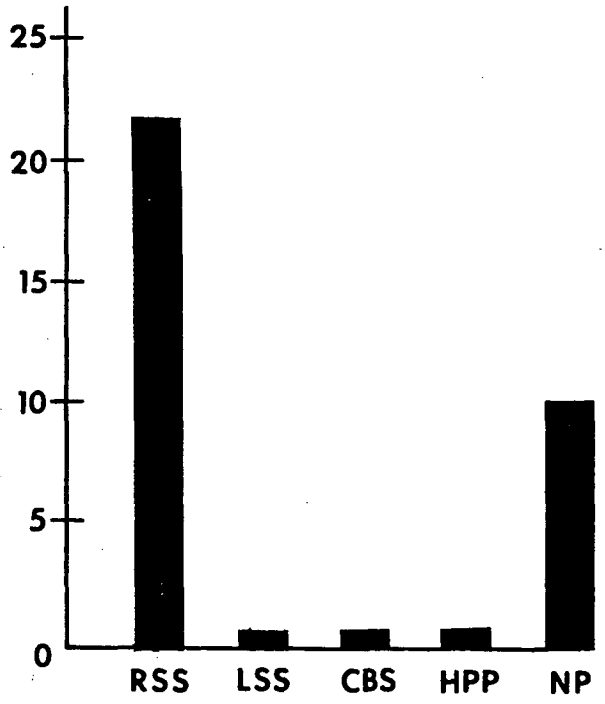
RS Right Side Seam

CF Center Front

LS Left Side Seam

CB Center Back

Figure 2. Locations of skirt openings



RSS	Right Side Seam
LSS	Left Side Seam
CBS	Center Back Seam
HPP	Hip Patch Pocket
NP	No Pocket

Figure 3. Locations of skirt pockets

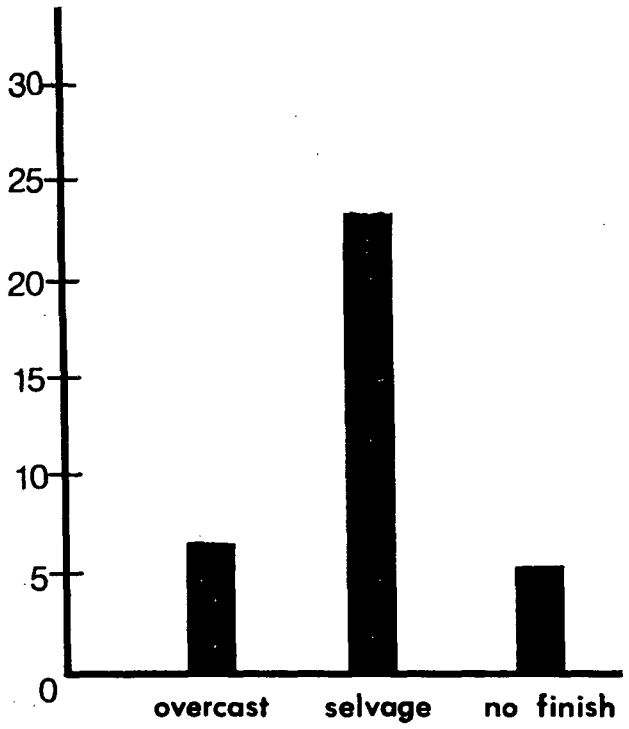
used the overcast finish (see Figure 4). None of the skirts, furthermore, used the double seam (or present-day French seam) construction (see Glossary).

Skirt hems

Periodicals described a variety of hem treatments for skirts, and most frequently mentioned was the deeply faced hem (see Figure 5). Although the magazines recommended very stiff fabrics, such as enameled leathers and paper muslins, the skirts in this study were primarily faced with lining fabrics, particularly glazed cottons or muslins. The depth of these facings was generally between three and six inches, despite the recommended nine inches. Only two skirts were found with facings deeper than six inches; one was 14 inches, while the other was 12.

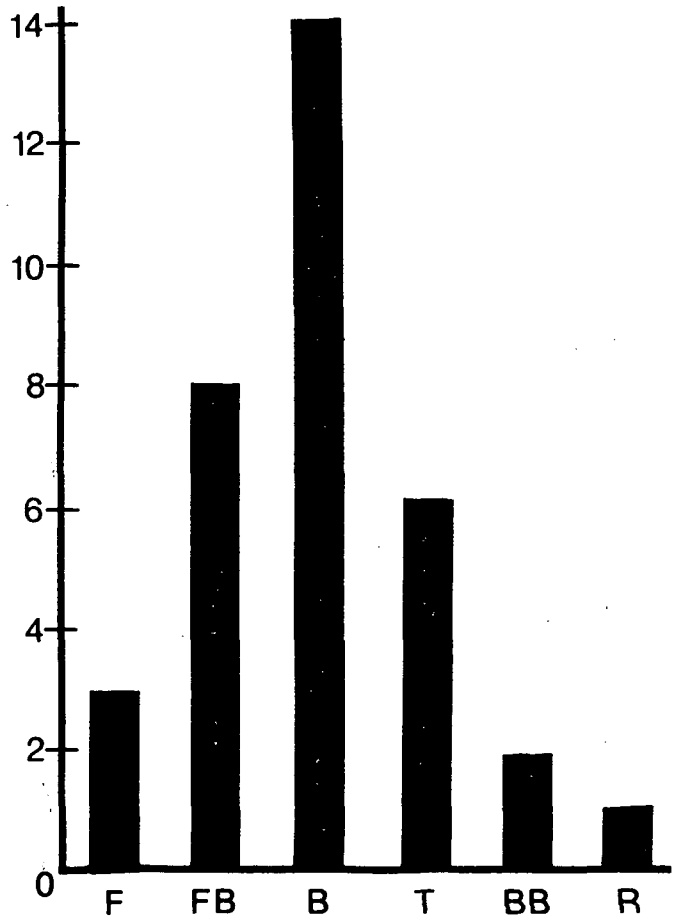
None of the 34 skirts examined in this study were weighted with shot, stiffened with whalebone, or run with straw braid. Twenty-two, however, were run along the bottom edge with worsted braid and used either in combination with hem facings (on eight skirts), or used alone (on 14) (see Figures 6 and 7). Other hem treatments included turned facings, bias binding, or rolled hems.

Despite the extensive instructions for facing hems, periodicals did not mention how the top edge of the facing was finished. Among the faced hems in this study, four were pinked along the edge, another four were left raw, and the remainder were simply folded under at the top.



('no finish' includes partial use of selvage edges)

Figure 4. Seam finishes on skirts



F .....Faced
FB.....Faced & Braided
B.....Braided
T.....Turned
P .....Bias Bound
R.....Rolled

Figure 5. Hem treatments on skirts

Figure 6. Faced hem with glazed cotton and worsted braid

Figure 7. Faced hem with pieced calico and no worsted braid

Bodice fastenings

Throughout the 1860s, fashion magazines reported that all bodices fastened at the center front, with the exception of some ball-gowns. Every one of the 39 bodices in this study (including the one ball-gown) supported that assertion. It is particularly unusual, therefore, that only one dress exemplified the recommended procedure of attaching a center front lap in order to prevent undergarments from showing through the buttonholes.

Buttons and buttonholes Of the 23 bodices with center front buttons, only 11 had functional button closures. The rest were purely decorative buttons combined with hooks and eyes. Although writers deplored this technique, it was prevalent among the bodices in this study.

While the standard size of center front buttons was about five-eighths of an inch (see Table 4), the type of shank at the back was a little more varied. Thirteen of the groups of buttons had padded cloth backs and required the addition of thread shanks. One of the metal buttons had punched holes which also required thread shanks. And seven groups of buttons had built-in metal shanks. One of the metal shank types of button had a hole in the shaft and a spiral ring at the end, which, according to the periodicals separated from the shaft so that the buttons could be removed from calico dresses before washing.

A simple technique that magazines recommended for sewing on buttons but that did not appear on any of the garments in this study involved the application of a folded piece of muslin between the button and the garment. Supposedly, this technique strengthened the button.

Table 4. Button sizes at the center front of the bodice

Button sizes	1/4"	3/8"	1/2"	5/8"	1"
n^1	4	–	1	4	–
n^2	1	1	–	4	–
n^3	–	–	–	3	1
n^4	–	–	–	1	–
n^6	–	–	–	3	–
Total	5	1	1	15	1

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^4 ensemble dresses;

n^6 dresses close to the 1860s.

Magazines also advised that buttons be placed about one and a half inches apart and one inch from the center front edge. Of the 23 bodices in this study with center front buttons, only one followed the recommended one inch distance. Generally, they were placed between one and two inches apart and only one-eighth to one-quarter of an inch from the center front edge (see Table 5).

The distance of buttonholes from the center front edge was very similar to that of buttons. Of the 11 bodices with buttonholes, five were placed one-quarter inch from the edge, another five one-eighth inch and the remaining garment one-sixteenth inch. All of the buttonholes had been handworked and positioned horizontally, despite the fact that buttonhole orientation was never discussed in periodicals.

Hooks and eyes Hooks and eyes were by far the most popular fasteners used during the 1860s. They appeared as major front closures on 26 of the 39 bodices, and were the only closures found on wraps. Even the one ball-dress in the study which, according to periodicals could be laced up the back, was fastened in the front with hooks and eyes.

Although hooks and eyes were typically spaced about 3/4" from the edge and one inch apart, the amount varied tremendously between bodices and wraps. For instance, while 17 of the bodices were found to have hooks spaced one inch apart, only one wrap was found with the same. One coat had hooks spaced as much as four inches apart.

Periodicals endorsed the practice of many sewers to conceal

Table 5. Distance of buttons from the center front edge

	0"	1/16"	1/8"	1/4"	3/8"	1/2"	1"
n^1	–	–	1	6	1	1	–
n^2	2	1	–	3	–	–	–
n^3	–	–	2	–	1	–	1
n^4	–	–	–	1	–	–	–
n^6	–	–	2	1	–	–	–
Total	2	1	5	11	2	1	1

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^4 ensemble dresses;

n^6 dresses close to the 1860s.

the sewn ends of hooks and eyes, and suggested several ways that it might be accomplished. Hooks, they said, could be sewn to the underside of the center front turning (or facing) and poked through the fabric to reveal only the hook end. This technique was found on eight of the bodices. Magazines also suggested that eyes could be partially concealed by first sewing them onto a bias tape and then stitching the tape to the inside of the bodice. However, this was only found on two of the bodices. It seems that sewers preferred to sandwich the eyes between the dress fabric and lining and slip-stitch the layers together. It is particularly interesting that although this technique was used on 11 of the bodices, it was not mentioned at all in periodicals. Still another technique that was found on six of the bodices, but not supported in periodicals, allowed the lining to hang freely from the bodice at the center front opening. The hooks were then sewn only to the lining.

Corselets

Corselets were basically two swatches of underlining fabric or wide tape sewn to the dart seams. When hooked together, they relieved some of the tension at the waist of a garment, particularly when button closures were used. In this study, corselets were found on only three of the bodices (two with buttons), plus one very fitted wrap. However, the corselet found on the wrap consisted of a wide twill belt and was sewn completely around the inside of the waist, rather than being attached to the darts.

Direction of bodice closures

Despite the efforts of some magazines to foster a standard right over left direction for fastening bodices, the same magazines occasionally showed garments that fastened in the opposite direction. This inconsistency in the literature may partly explain the capriciousness of bodice fastenings at that time. Of the 37 bodices with center front closures, 19 fastened right to left and 18 fastened left over right. The remaining two bodices in the study had no fasteners at the openings and may have been pinned closed.

Since buttons were not found on any of the wraps and many of the capes simply tied at the neck or fastened with just one hook and eye, a conscious direction of fastening was difficult to ascertain for wraps. Of the 13 wraps in the study, only three had a sufficient number (two or more) of hooks and eyes to be considered consciously fastened in either direction. All three wraps fastened left to right.

Darts

With the exception of special fitting problems which required single or triple bust darts, magazines normally agreed that two darts were sufficient for most figures. Evidently, women heeded some of that advice, since 28 bodices had double darts, compared to only single cases of single and triple darts. Additional advice about darts, however, was generally ignored. For instance, women were instructed

to trim away some of the bulk from darts, press them open, and overcast the raw edges. Of the garments in this study, however, only 13 bodices had trimmed darts at the bust, and only 11 of those had been overcast together. Furthermore, pressing was only done on two of the trimmed darts. The rest of the darts were left untreated.

Other types of darts were occasionally present on bodices and wraps (see Table 6). One dress, for instance, was darted at the elbow of the upper sleeve rather than having the excess fabric eased into the lower sleeve, as writers recommended. Another dress, specifically designed for maternity and breast feeding, had front princess seams that extended into the shoulder. From each seam, three short darts angled toward the bust. Beneath the outer layer of fabric was a triple darted underlining, with darts commencing at the waist rather than at the princess seams as on the top layer. Nothing at all was found in periodicals that pertained to either the construction of maternity and nursing garments, or the separate darting of underlinings.

One other type of dart that was unique to underlinings was located at the center back. It was a fairly shallow dart and ran from the waist to the neck. Interestingly enough, the dart was only found on bodices with one-piece back underlinings. It did not appear on garments where the lining had princess seams (see Figures 8 and 9). Although this particular dart was not mentioned in periodicals, it may have only been necessary for certain figure types. That would explain why only six of the 22 underlinings without princess seams had center back darts.

Table 6. Location of darts

	n^1	n^2	n^3	n^4(d)	n^4(w)	n^5	n^6(d)	n^6(w)	Total
1 at bust	1	—	—	—	—	—	—	—	1
2 at bust	12	6	4	2	—	1	4	—	29
3 at bust	1	1	—	—	—	—	—	—	2
Center back underlining	3	2	1	—	—	—	—	—	6
Front princess seams	—	—	—	—	—	1	—	—	1
1 at bust underlining	2	—	—	—	—	—	—	—	2
2 at bust underlining	2	—	—	—	—	—	—	—	2
3 at bust underlining	1	—	—	—	—	—	—	—	1
Elbow	1	—	—	—	—	—	—	—	1
Shoulder	—	—	—	—	—	3	—	—	3
Back neck	—	—	—	—	1	1	—	1	3

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^4(d) ensemble dresses;

n^4(w) ensemble wraps;

n^5 wraps;

n^6(d) dresses close to 1860s;

n^6(w) wraps close to 1860s.

Figure 8. Bodice underlining with princess seams but without a center back dart

Figure 9. Bodice underlining without princess seams but with a center back dart

Princess seams

Of the 30 bodices in this study with so-called "princess seams," 29 were constructed by first folding under the seam allowance of the side piece, lapping it over the allowance of the center back piece, and then stitching the seam from the outside. Since this was the technique recommended in periodicals, it is not surprising that every bodice except one was sewn together in this manner. However, magazines neglected to suggest a technique for underlining the side panels. Twenty-two of the bodices were underlined with one combined back and side piece, whereas eight had separate underlining pieces for the side panels and were cut identically to the outer layer of fabric.

The only other advice that magazines offered in regard to princess seams was that the two seams be spaced an inch apart at the center back. Only seven bodices in this study followed the recommended spacing of one inch; however, many garments came close to that (i.e., five at 1-1/4", and four at 3/4"). Unfortunately, no explanation was given for the recommendation.

Side seams

Women were also advised to seam the bodice sides from the inside, press the allowances open, and then bind each side with tape. However, judging from the mere two bodices and two wraps that were pressed open, plus the one wrap that was clipped to lie flat, the advice was not taken seriously. Furthermore, 22 of the bodices and five of the wraps were not finished at all in the seams. Of the remaining garments, 13 bodices and three wraps were overcast, one sheer

cotton dress was rolled and stitched, and two cape-style wraps used only selvage edges (see Figure 10).

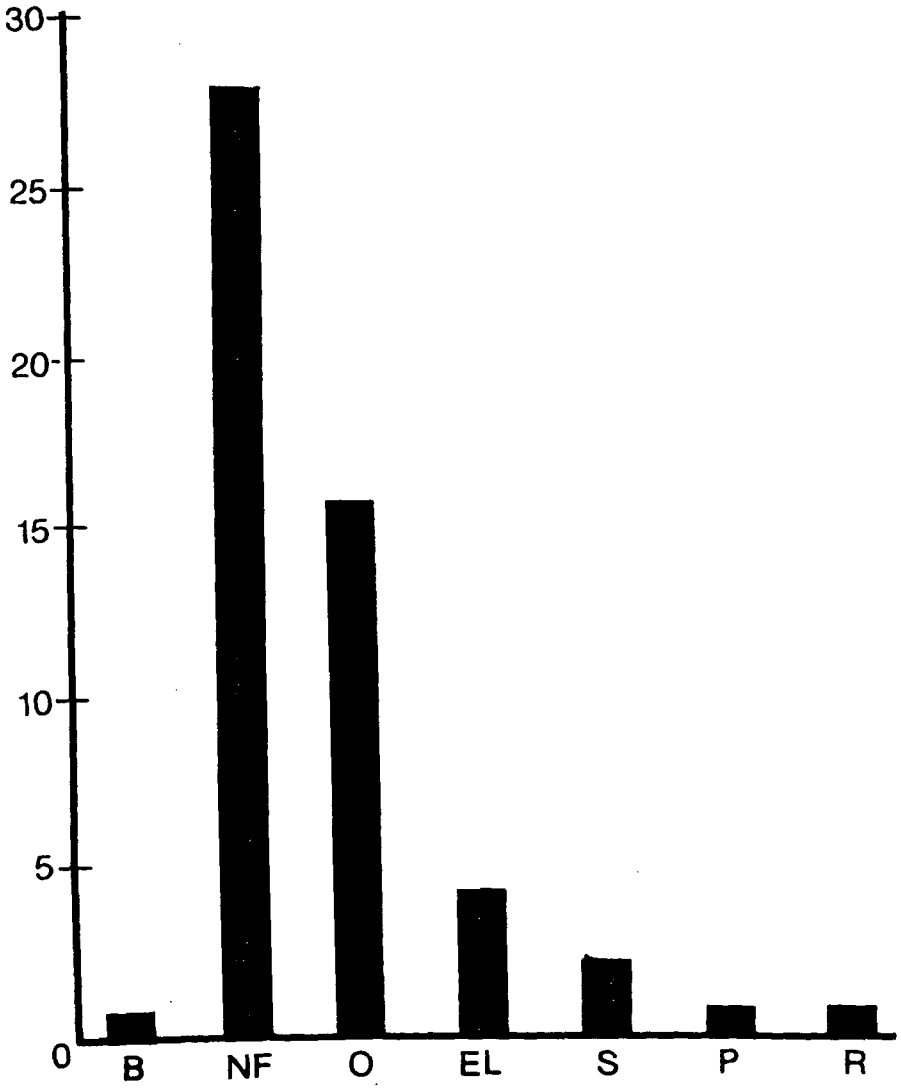
Shoulder seams

Shoulder seams followed a pattern similar to the side seams except that four additional garments were overcast at the seam allowances, and one more was pressed open for a total of five.

Boning

According to numerous fashion articles, boning was usually placed at side seams and darts, and occasionally at the center back or along a center back opening. In addition to those locations, however, the garments in this study reveal several other minor locations, such as the princess seams and the center front opening (see Table 7). But the majority of boning occurred at the bust darts, and in 23 of the cases, the bones had been slipped inside the dart and secured with a row of stitches 2/5" from the dart seam (see Figures 11 and 12). The only other technique found for bust dart boning was on a fitted jacket. In that case, the darts were split open and pressed. A narrow casing of twill tape was then hand-stitched to the pressed dart seam and the bones run inside. This casing technique was also used at center backs, princess seams, and (in six cases) center front openings.

One other technique used in four cases at the center front opening was to sandwich the boning between the layers of dress fabric and underlining. The center front edge was then slip-stitched closed and run 2/5" from the edge with stitches to prevent the whalebone from migrating.



B.....Buttonhole Stitch
NF.....No Finish
O.....Overcast
EL.....Enclosed in Lining
S.....Selvage
P.....Pinked
R.....Rolled

Figure 10. Seam finishes on bodices and wraps

Table 7. Locations of boning on bodices and wraps

	n^1	n^2	n^3	n^4(b)	n^4(w)	n^5	n^6(b)	n^6(w)	Total
Right center front opening	2	1	1	1		1	1		7
Left center front opening	2	2		2		1	1		8
Center back	1	2							3
Bust darts	9	6	3	3		1	2		24
Side seams	4	2				1			7
Princess seams		1				1			2
No boning used at all	9	1	2		3	8	1	1	25

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^4(b) ensemble bodices;

n^4(w) ensemble wraps;

n^5 wraps;

n^6(b) bodices close to 1860s;

n^6(w) wraps close to 1860s.

Figure 11. Insertion of whalebones into trimmed bodice darts

Figure 12. Insertion of whalebones into untrimmed bodice darts

However, not all garments in this study contained boning. Thirteen bodices, for instance, were left completely free of stays, as were 12 wraps.

Wadding or padding

Only one bodice was found with padding at the bust, but as instructed in periodicals, the cotton "fluff" was not placed directly against the dress fabric. Instead, it was covered with another fabric and then basted into the garment. But despite the periodical's suggestion that dimet be used as the covering fabric, the bodice in this study was covered with ordinary muslin.

Cording

Throughout the 1860s, cording was recommended as a finish for bodice hems, sleeve hems, and plain necks (see Table 8). When the cord was applied at these locations, a bias strip of fabric was sewn to the garment edge as a small facing. As the strip was hemmed down to the inside of the garment, a narrow cord was run between the layers. The cord and facing were then rolled slightly forward and stitched in place so that the covered cord was visible to the outside of the garment. Although cording was not recommended in combination with band collars, four garments in this study used them together.

Another recommended location for cording was the armscye of bodices and wraps. Thirty-two of the garments in this study were corded there (see Figure 13). Two other locations that were found on single garments were the center front opening and the sleeve outside seam. Neither of these, however, were mentioned in periodicals.

Table 8. Locations of cording

	n^1	n^2	n^3	n^4(d)	n^4(w)	n^5	n^6(d)	n^6(w)	Total
Waist hems	14	7	3	2	—	2	—	—	28
Sleeve hems	3	3	2	3	—	—	1	—	12
Armscyes	17	4	4	2	—	2	3	—	32
Plain necks	9	4	3	1	1	4	1	—	23
Collars	—	1	—	—	2	1	—	—	4
Center front openings	—	1	—	—	—	—	—	—	1
Sleeve outside seams	—	—	1	—	—	—	—	—	1

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^4(d) ensemble dresses;

n^4(w) ensemble wraps;

n^5 wraps;

n^6(d) dresses close to 1860s;

n^6(w) wraps close to 1860s.

Figure 13. Cording placed at the armscye and sleeve outside seam

Armscyes

The recommended quarter-inch seam allowance for armscyes was almost uniformly observed on garments. Out of a total of 39 bodices, only three deviated slightly to three-eighths inch. Similarly uniform was the finish to the seam allowance. Three-fourths of the bodices (29), for instance, were finished with an overcast stitch. The remaining 10 were all left plain. One other armscye finish (a bias binding) did appear, however, on an 1859 coat (see Figure 14).

Dress protectors

Women were advised to protect their garments from perspiration by sewing either commercially produced shields or swatches of chamois into the armscyes. But evidently this technique was not followed with much regularity since only three garments were found with any kind of protective device in them. Oddly enough, none of the three garments used the commercial or chamois shields. One coat, for instance, had crescents of silk sewn into the armscyes, while a dress had large patches of twill underlining fabric basted into the armscyes. The third garment followed a technique that was specifically recommended for calico dresses, whereby the arm-holes and side seams were faced with muslin.

Bustle techniques

Despite the recommendations of two magazines, 12 inch deep bustle linings were not found on any of the garments in this study. And while one rather short overskirt was underlined completely with crinoline, the more widely recommended technique for making skirt bustles was to attach various tapes or fasteners to the back. Of the 34 dresses

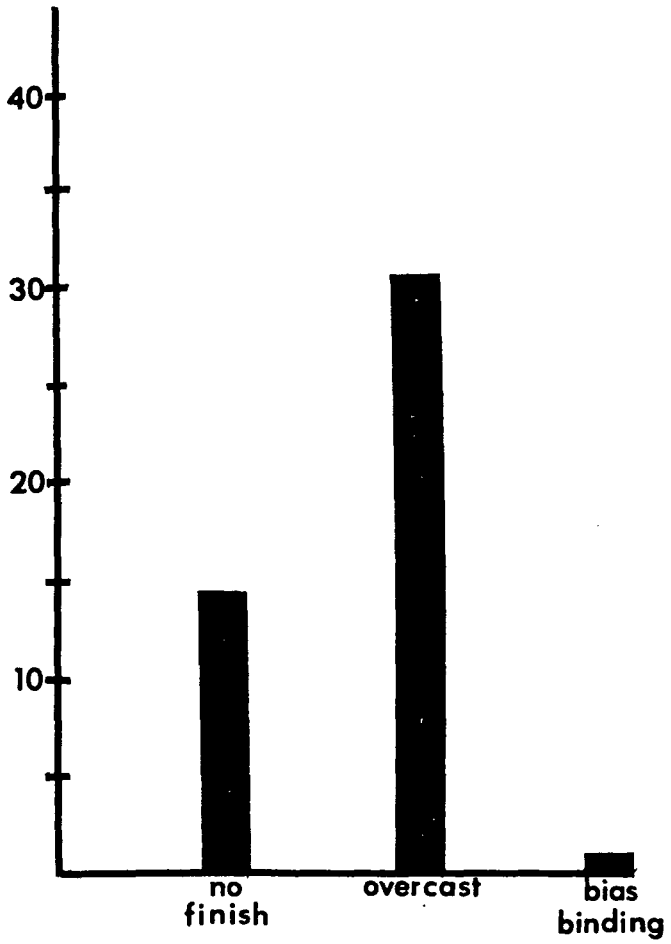


Figure 14. Armscye finishes on bodices and wraps

in this study, only two skirts were bustled in the back, and both of the techniques were supported in periodicals. The simpler of the two required a tape to be sewn into each side seam. When the tapes were tied together underneath the skirt, they pulled the fullness toward the back (see Figure 15).

The second bustle technique involved a series of tapes to be suspended from the waist and sewn at various lengths to the skirt in order to form puffs (see Figures 16 and 17). None of the garments in this study used buttons and buttonholes or hooks and eyes to form a bustle despite the frequent recommendations in periodicals.

Turning the skirt

After the bodice was completed, the seamstress was told to turn down the top edge of the skirt one to three inches and then pleat or gather the fullness into a waistband or bodice hem. Although this technique occurred on 27 of the 34 skirts, it was not always turned down evenly. Thirteen of the skirts were turned down considerably more in front than in back (see Figures 18 and 19). I surmise that by turning the skirt unevenly, a small train was formed without having to shape the hem.

Of the remaining eight skirts that were not turned, four were sewn with a seam allowance and three had the top edge enclosed in a waistband (see Table 9).

Pleating and gathering

Despite the profuse references in magazines to pleats and gathers, only stroked gathers (or cartridge pleats) received minute description.

Figure 15. Bustle ties in the side seams of a skirt

Figure 16. Skirt bustle formed by tapes

Figure 17. Bustle tapes attached to the waist

Figure 18. Knife pleated skirt unevenly turned

Figure 19. Cartridge pleated skirt evenly turned

Table 9. Treatment of the skirt top edges

	Turned evenly	Turned unevenly	Seamed	Enclosed in waistband
n^1	9	7	3	1
n^2	2	4	–	1
n^3	–	1	1	1
n^6	3	1	–	–
Total	14	13	4	3

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^3 bodices alone;

n^6 Dresses close to 1860s.

Consequently, 18 (or over 50 percent) of the skirts in this study were found to contain some cartridge pleats. Of those 18, however, only four were completely cartridge pleated. The rest were cartridge pleated only at the back and combined with the flatter knife pleats (see Table 10). Furthermore, of the six skirts containing plain (unstroked) gathers, two appeared as if they had been tampered with and, therefore, may have also originally been stroked.

Loops for hanging garments

According to periodicals, one of the final steps in construction was to attach loops of fabric run with cord to the inside of a garment so that it could be hung from hooks. The recommended locations for loops were the center back of the neck on wraps, the waist hem and armscyes on bodices, and the waistband on skirts, all of which were evinced on garments in this study. However, the magazines further stated that loops should be made from rolled and corded bias strips of fabric. Only six garments in this study had loops made from bias strips, and only one was run with cord. The remaining loops were formed from twill tapes and worsted braids.

Conclusion

Although sewers of the 1860s did not strictly adhere to published advice about construction, the dresses and wraps examined in this study indicate that many of the recommended techniques were actually followed. Therefore, I reject the null hypothesis that:

> the construction techniques prevalent in surviving dresses and wraps are not related to published information about the style and structure of women's dresses and wraps.

Table 10. Skirt pleats and gathers

	n^1	n^2	n^4	n^6	Total
Box pleats	4	–	–	–	4
Knife pleats	4	–	1	1	6
Cartridge pleats	4	–	–	–	4
Back cartridge pleats w/side knife pleats	3	1	1	3	8
Back cartridge pleats	3	3	–	–	6
Unstroked gathers	1[a]	3	1	–	5
Back unstroked gathers w/side knife pleats	1[a]	–	–	–	1

[a]Not original gathers.

n^1 attached bodices and skirts;

n^2 separated bodices and skirts;

n^4 ensemble dresses;

n^6 dresses close to 1860s.

The Relationship of Construction Techniques to Style

One major purpose of this study was to accept or reject the hypothesis that:

> there is as much variation of construction techniques within a single style of women's dress (or wrap) as among several prevalent styles of dress (or wrap).

In selecting garments to test this hypothesis, the possibility was allowed that not all garments would be of the same "high fashion" styles as those illustrated in fashion magazines, and that perhaps some would consist of local modification or rural interpretation. It was also important to allow for the continuous changes that occurred in fashion throughout the decade, rather than view the period as having just one autonomous and immutable style. For instance, the dome-shaped skirts that were found early in the decade became more flared with gentle back fullness toward the middle of the decade. Then, at the end of the 1860s, the back fullness became highly exaggerated with loops and puffs. Bodice waistlines also went through a series of change. Starting out the decade pointed in front, the bodice waistline gradually became plain and slightly raised from the natural position, until finally a short peplum was added. Another less formal type of bodice that was worn throughout the decade consisted of a dartless front gathered onto a skirt waistband and was christened the "infant waist." Other major style changes occurred in the sleeve. For instance, the wide bell-shaped "pagoda" sleeve, especially popular during the 1850s, diminished in size and was gradually replaced by the fitted two-piece coat sleeve.

Dress styles examined in this study

Despite the transitory styles during the 1860s, two garment features remained relatively constant throughout the decade. First, dresses of the 1860s were characterized by a dropped armscye which made the bodice appear sloped at the shoulders. It was a particularly significant feature and appeared on all 39 dresses. Then, in order to further exaggerate the slope, the shoulder seams were placed toward the back of the bodice instead of at the top, as is presently done.

Second, magazines reported that all day dresses had bodices that fastened in the front, and that only some ball-gowns still retained the back lacing. Of the 39 bodices I examined in this study, all examples, including the single ball-gown, fastened at the center front.

Wrap styles examined in the study

Wrap styles were a little harder to define than dress styles simply because there were so many more species of wraps. For instance, the types of wraps included in this study range from snugly fitted jackets, to full-shaped coats, to unshaped capes. Usually, however, wraps followed the same design lines as dresses. Sleeved wraps, for example, had sloped shoulders similar to the bodices over which they would be worn.

Effects of a center front point

Only three bodices in this study dipped to a point at the center front. Two, from the early 1860s, were normally positioned at the waist, while the third, from 1871, had a short peplum-type bodice. But one thing that all three had in common was the fact that they were

left separate from their skirts. Of the 39 bodices that were examined, 25 were attached to a skirt, as compared to 14 left separate. I surmise, therefore, that attaching a skirt to a pointed waist was difficult, and as the plain waist came into favor, skirts were increasingly attached to bodices.

The vanishing waist

One of the major preoccupations (or compulsions) of women during the 1860s was their pursuit of a small waist, and to that end, no device was spared. Of course, tightly laced corsets helped, but where compression failed, illusion triumphed. The designers realized that by broadening the shoulders and hips, they made the waist appear smaller in comparison. Vertical lines in garments also assisted in the illusion. The placement of buttons (functional or nonfunctional) down the center front, for instance, drew the eye vertically. This device was used on 23 of the bodices.

Optical illusion was also applied to the backs of bodices. Side seams, for example, were placed at the back of armscyes on all bodices and sleeved wraps. Princess seams were also used to narrow the appearance of the waist. The tightness of the princess curve, however, necessitated a lapped (or applied) technique of construction. Of the 26 bodices with princess seams, only one was seamed from the inside. The rest were all lapped. Of the three coats with princess seams, however, all three were seamed from the inside. This was probably due to the gentler curves used on the wraps.

Darts

Ordinarily, bodices required only two bust darts to be sewn jointly with the underlining, but all of that changed with the "infant waist" style. Since the infant waist (or bloused waist) was gathered onto a waistband instead of being darted, the "underlining" was worked independently of the outer fabric. Hence, the "infant waist" dresses found in this study all had darted underlinings beneath undarted bodices.

Another major change in the bust dart occurred toward the end of the decade as peplum bodices came into fashion. In order to create the flare at the hips, sewers made darts double-pointed and sometimes bisected them with a very short horizontal dart at the waist. This horizontal dart not only provided flare to the front of the peplum, but it was also a convenient location for setting in a tiny watch pocket. Unfortunately, only two bodices of that style were examined in this study, and while both used the double-ended dart, only one had the short horizontal dart and watch pocket.

Modified peplums

Two of the dresses in this study revealed some information about rural interpretation of urban styles. Each had a plain bodice with single-pointed bust darts, but instead of being cut long for a peplum, they had separate peplum skirts. One of the peplums was cut with flare and sewn onto a separate waistband. The other was cut in plain widths, then pleated and sewn directly to the bodice.

Boning

The change in the shape of the dart had a definite effect upon the method of boning. The single-pointed darts usually had bones slipped inside and secured with a row of stitching. But as the dart became much longer and pointed at both ends, that technique became obsolete. Of the two bodices in this study with double-pointed darts, none were boned. There was, however, one fitted jacket with boning at its double-pointed darts. The darts had been split open, pressed, and overcast. Then a casing of twill tape was sewn onto each dart seam and whalebone slipped inside.

Skirt trains

As the fullness in the skirt gradually migrated more toward the back, skirt trains correspondingly gained in length. Therefore, the technique of uneven waist turning was no longer adequate. Instead, the gored and bustled styles had to be turned evenly at the waist and shaped at the hem. This later technique was found on four dresses in this study, all of which were of the gored style.

Conclusion

Since some construction techniques were found to vary on dresses and wraps according to their style, I reject the null hypothesis that:

> there is as much variation of construction techniques within a single style of women's dress (or wrap) as among several prevalent styles of dress (or wrap).

The Relationship of Construction Techniques to Technology

During the mid-nineteenth century, great strides were made in the development of sewing technology, and at the top of the list was the sewing machine. By the end of the 1860s, the "iron maidens" had become so readily available and so low priced that, quite literally, hundreds of thousands of women owned them. Therefore, it was another purpose of this study to test the hypothesis that:

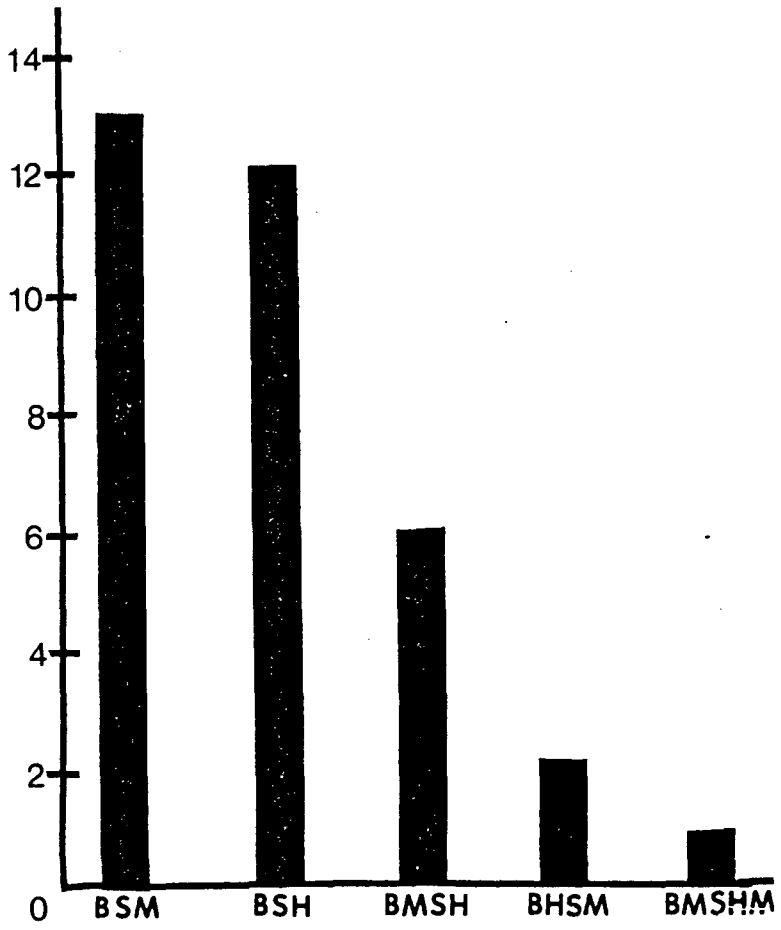
> technology does not affect the choice of construction techniques in dresses and wraps.

Use of the sewing machine

The popularity of the sewing machine is evident from the 22 dresses in this study that were sewn by machine. However, the fact that one part of a dress was sewn by machine did not guarantee that the entire garment would be sewn the same way. Six of the garments in this study, for instance, had bodices that were sewn by machine and corresponding skirts that were sewn by hand (see Figure 20). Out of this phenomenon, several theories emerged.

1. Two people worked together on a garment but only one machine was available.
2. The seamstress anticipated the recycling of the skirt fabric; therefore, she only basted the widths together.
3. Only the garment seams that received a tremendous amount of strain (i.e., darts and bodice side seams) needed to be sewn by machine.

However, only the first theory could explain the two dresses that were



BSM.....Bodice & Skirt Machine Sewn
BSH.....Bodice & Skirt Hand Sewn
BMSH.....Bodice Machine / Skirt Hand Sewn
BHSM.....Bodice Hand / Skirt Machine Sewn
BMSHM.....Bodice Machine/Skirt Hand & Machine Sewn

Figure 20. Distribution of machine and hand sewn dresses

hand sewn in the bodice and machine sewn in the skirt. To complicate matters even more, one dress was sewn with a chain-stitch machine in the bodice and a lock-stitch machine in the attached skirt and sleeves.

Although the machine was readily accepted for major garment seams, some areas of the garment retained the conventional hand technique. Sleeves, for instance, were generally backstitched into the armscyes, and only five garments (4 dresses and 1 coat) in this study were sewn into an armscye by machine. It is plausible that the sewing machine was too bulky to fit into an armscye, or that the presence of cording made it too difficult to stitch by machine. However, three of the five armscyes that were sewn by machine were corded. Another theory is that the frequent style changes in sleeves inhibited most seamstresses from attaching them too securely, lest they have to remove them later.

Another area of the garment where hand sewing was conventionally used was at the waist. Of the 34 dresses that were examined, only one had a skirt attached to the bodice by machine. The rest were all overhanded as prescribed in magazines. I surmise that the technique of stroking the gathers with a needle as they were sewn was the reason most women preferred to attach the skirt by hand. Furthermore, women may have anticipated future adjustments at the waist for skirt length or redistribution of the pleats or gathers for changes in style or weight.

Finally, the application of trims was almost always done by hand. Only one bodice and one wrap had trim sewn on by machine. The

rest were merely basted with running stitches as if the trims were only temporary.

Pressing equipment

Despite the availability of flat irons and the encouragement of writers during the 1860s, only a few garments (two bodices, two skirts, and two wraps) in this study were pressed open at the seams. I surmise since the irons required continual heating the technique of pressing seams during construction was rather a nuisance for most women and, therefore, was avoided as much as possible.

Pinking tools

Pinking was similarly avoided by women since the tools were rather crude in design. Only two garments had pinked ruches, four skirts had pinked hem facings, and one skirt had a pinked waist turning. As for seam finishes, pinking was used on only one coat. However, the notches were rather large and spaced farther apart than is normal at present. This indicates that perhaps the notching was intended more for clipped curve seams so that they would press flat, rather than to prevent edges from unravelling.

Hooks and eyes

Although hooks with spring humps were advertised in magazines, all of the garments in this study with hooks had the brass or iron hammered variety. Since they were not engineered to stay closed on their own, garments were required to fit snugly so that there would be some tension placed on them. It appears, then, that the technological development

of hooks and eyes affected both the style and the construction of garments.

Conclusion

Since many of the technological developments (particularly the sewing machine) were used on garments in this study, I partially reject the null hypothesis that:

> technology does not affect the choice of construction techniques in dresses and wraps.

The Relationship of Construction Techniques to Fabric

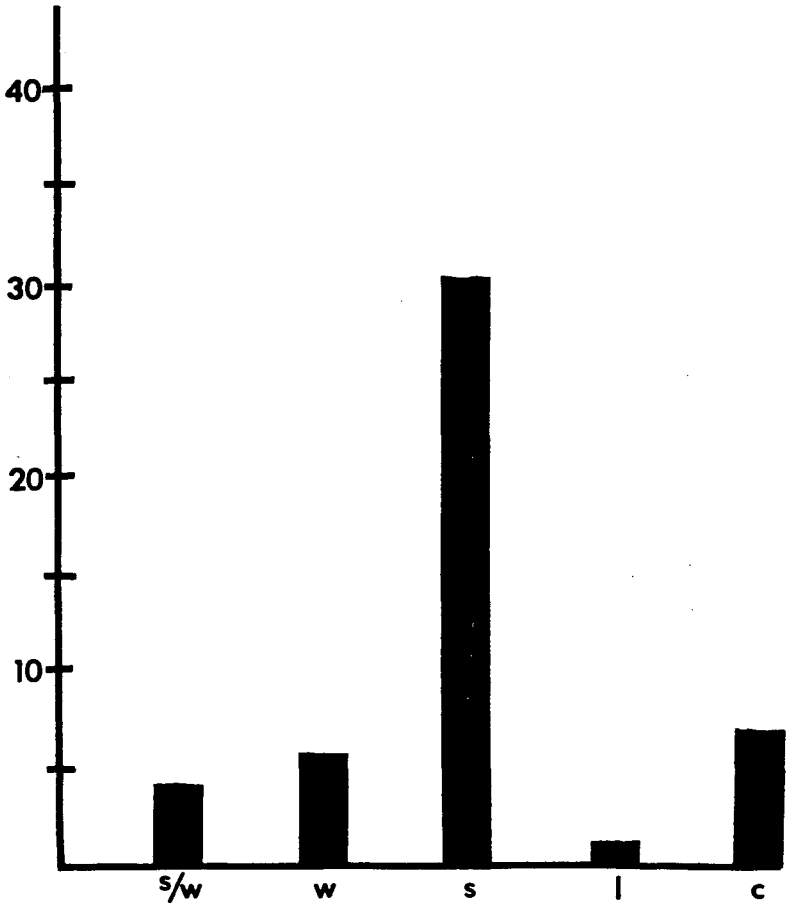
Another objective of this study is to accept or reject the hypothesis that:

> the type of fabric (differentiated by fiber) in a dress or wrap does not affect the choice of construction techniques found in the garment.

To test this hypothesis, I examined five different fabrics: cotton, linen, silk, wool, and a blend of wool and silk (see Figure 21). Of the 31 silk garments, only one velvet wrap and one rep weave dress deviated from the light, firm taffeta-type weight. Of the seven cotton garments, the fabric weights varied only from calicoes to dimities. The three woolen dresses in the study were generally of a coarse homespun-type, whereas the woolen wraps were more of a finer gabardine weight.

Lining/underlining

One thing that seemed to be affected by the choice of fabric was the usage of linings and underlinings. Cottons and woolens, for instance,



Fabrics	
s/w	silk/wool
w	wool
s	silk
l	linen
c	cotton

Figure 21. Distribution of fabrics

were typically underlined in the bodice, yet left plain in the skirt, while silks and silk/wool blends were generally underlined throughout (see Table 11). Unfortunately, not enough wraps were examined to show any specific fabric trends. However, it did appear that the style of wrap played an important role. For instance, the fitted types of wraps tended to be lined more often than capes.

Seam allowances

Another thing that seemed to be affected by the choice of fabric was the size of the seam allowance. However, since the depth tended to vary more within a bodice, skirt seams were the more reliable indicator.

The skirts examined in this study suggest that the heavier the fabric was, the larger the seam allowance used. Cottons, for instance, tended to have a 1/8" allowance, whereas some coarsely woven woolens had 3/8" allowances. The majority of garments, however, used a 1/4" allowance, and that amount extended across all fabrics (see Table 12).

Skirt pleats and gathers

Periodicals were quite adamant about the types of pleats and gathers appropriate to certain fabrics. For instance, women were told that light cottons should be gauged into gathers, while very heavy fabrics should be flatly pleated. The dresses in this study support that advice strongly. Five the of the six cotton dresses were either cartridge pleated or gathered, and two of the three wool dresses were box pleated. All three of silk/wool blend dresses had back cartridge pleats and only one had knife pleats at the side. The plain silk

Table 11. Ratios of dress fabrics to garment linings

Fabric	Lined skirts	Lined bodices
Cotton	1/6	6/6
Wool	0/3	3/3
Silk	20/22	22/22
Silk/wool	3/3	3/3

Table 12. Relationship of seam allowance width to fabric

Fabric	1/8"	1/4"	3/8"	1/2"
Cotton	4	1	1	–
Silk	1	17	3	1
Silk/wool	–	3	–	–
Wool	–	1	2	–
Total	5	22	6	1

dresses, although they evinced a variety of pleats and gathers, clustered around knife pleats with or without back cartridge pleats (see Table 13).

Skirt hems

The type of skirt hem treatment also appeared to relate to the type of dress fabric. Twelve of the silk and two of the wool and silk blend skirts, for instance, were merely run with worsted braid. Eight other silk dresses used a combination hem facing and braid. Cotton and wool skirts, on the other hand, were primarily just turned up and hemmed, although two cotton dresses were faced with cotton calico and muslin.

Conclusion

Since several construction techniques did appear to be used with only certain fabrics, I reject the hypothesis that:

> the type of fabric (differentiated by fiber) in a dress or wrap does not affect the choice of construction techniques found in the garment.

Table 13. Relationship of skirt pleats and gathers

Treatment	Cotton	Silk	Silk/wool	Wool	Total
Box pleats	1	1	–	2	4
Knife pleats	–	6	–	–	6
Cartridge pleats	3	1	–	–	4
Back cartridge pleats w/side knife pleats	–	6	1	1	8
Back cartridge pleats	1	3	2	–	6
Unstroked gathers	1	4 (1[a])	–	–	5
Back unstroked gathers w/side knife pleats	–	1[a]	–	–	1

[a]Not original gathers.

SUMMARY AND CONCLUSIONS

The decade of the 1860s has been characterized as a destructive and volatile period in American history, but it was also an age of tremendous industrial growth, flanked by years of western expansion. By the end of the decade, railroads and riverboats had penetrated deeply into the midwestern states, carrying with them commercially produced eastern goods. Among the various items on board were tools and equipment for sewing garments, ready-to-wear wraps and undergarments, and (most importantly) women's periodicals.

Periodicals played a vital role in keeping women informed of the latest fashions. Furthermore, they instructed women in the construction of various styles and eventually provided them with scaled-down paper patterns to follow. Toward the back of each magazine were also printed many alluring advertisements for the latest in sewing gadgets. Particularly cogent were the advertisements for sewing machines, which even offered reduced club rates. Eventually, the competition between sewing machine manufacturers became so fierce that the price of machines fell to a level that most families could afford. However, since 1) the styles of dresses and wraps changed, and 2) women became increasingly equipped with new sewing tools and current information about construction, the question remains whether or not a corresponding change occurred in the methods of construction.

This study specifically examines dresses and wraps of the 1860s to determine if no relationship exists between methods of garment construction and 1) changes in garment style, 2) published advice about

sewing, 3) changes in sewing-related technology, and 4) types of fabric. The purpose is to gather as much primary structural information as possible from dresses and wraps of the 1860s to determine if certain techniques (or combinations of techniques) are prevalent among certain styles. If a relationship does exist, then the construction information could assist in the dating of historic clothing.

The findings of this study reveal that periodicals contained an enormous amount of advice on construction, and that many of the techniques were used with much regularity, particularly those most related to garment design (i.e., cording, pleating, gathering, bustle looping, and measuring off the skirt widths). Technology also played a role in the construction of garments, but it was not as strong as I anticipated. For instance, regardless of whether a garment was sewn by machine, women still engaged the hand techniques when attaching sleeves to armscyes and skirts to bodices.

Style played a major role in the types of techniques that were used, particularly in the treatment of darts and boning. The shorter bodice style, for instance, had single-pointed darts at the waist which made it easy to slip whalebones inside. But as the long peplum-type bodice came into favor, the longer double-pointed darts made that technique obsolete. Instead, the darts were split open, pressed, and stitched with a special whalebone casing. Bloused (or "infant") waists also required a different technique. Since the outer fabric was gathered onto a waistband, but the underlining fabric was darted, the two layers of the front bodice had to be constructed independently and then joined.

Fabric also influenced the selection of certain construction techniques. Hems were largely determined by the type of fabric, as were seam allowance depths and types of pleating or gathering. For example, heavy fabrics, such as wool, often had slightly deeper seam allowances in the skirt and were box-pleated at the waist. Thin cottons, on the other hand, had narrower seam allowances and were generally gathered to a waistband. There was also a tendency among the cotton and wool dresses in this study to have underlining in just the bodice portion, whereas silks and silk/wool blends had underlining in the bodice and the skirt.

Despite the need for further research into the construction techniques of the 1860s, some tentative conclusions can be drawn from this study. Typically (or on at least half of the garments), dresses and fitted wraps were corded at the waistline, armscyes, and neckline. The armscye seam was almost always 1/4 inch deep and sewn by hand, even when other seams were sewn by machine. Bodices closed at the center front with either hooks and eyes or buttons and buttonholes. Sometimes buttons were used decoratively down the center front with no corresponding buttonholes. Boning was typically slipped inside bust darts and secured with a row of basting. When boning occurred at the center back, it was enclosed in a fabric casing. Usually an entire garment was underlined with cambric. The shoulder and bodice side seams were positioned toward the back and the deeply curved "princess-like" seams were lapped at the back.

Bodices and skirts could be either left separate or attached; however, the bodice was finished along the waistline before the skirt was over-

handed to it. Also, before the skirt was attached the hem was finished with a deep facing, worsted braid, or both, and the waist edge was folded under. Generally, a slit was left in the left side seam of the skirt and a pocket was placed in the right seam. The skirt fullness was then controlled with combinations of box and knife pleats and small even gathers, called "cartridge pleats." These cartridge pleats were particularly used at the center back for a higher concentration of fullness. At present it is not known whether these techniques were exclusive to the 1860s, nor is it known if they were exclusive to the upper midwest.

RECOMMENDATIONS FOR FURTHER RESEARCH

Although the four specific hypotheses in this study were rejected fully or partially, many other possible relationships to construction have yet to be tested. The formality of the garments, for instance, was not included in this study since there existed a built-in bias in the garments that were examined. Only the dressier garments are usually preserved. Geographical variation in construction was also not tested, and judging from the articles which appeared in periodicals, it may have been particularly important during that decade. Women in the southern United States, for example, may have had to modify their usual construction techniques to get through severe shortages or simply alter older garments to interpret new fashion trends.

Unfortunately, just because a technique was used during one decade does not automatically exclude it from use in other decades as well. In order to make construction dating a viable method, garments of women, men, and children across other decades surrounding the 1860s still need to be investigated.

I would also like to suggest a few additional things that should be done if this study is replicated with 1860s garments from other regions. First, some attention should be given to the manner in which buttons, especially the decorative type, were sewn onto bodices. A few of the bodices in this study had rows of buttons sewn on with a continuous strand of thread. Unfortunately, this technique was not documented.

Second, not enough wraps with center front fasteners were examined to determine if any real trends existed in the direction of closure.

Since wraps were one of the first female garments to be manufactured, it would be interesting to determine when the direction became uniform.

Last, measurements of dress waists should be taken to find if a relationship exists between the size and whether a skirt was attached to a bodice. Periodicals recommended that stouter women attach the skirt so there would be fewer layers of fabric at the waist.

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GLOSSARY

Most of the terms in this glossary are only operationally defined; however, there are a few terms which were defined in women's magazines of the 1860s. Those terms are identified at the end of each definition.

Backstitched Seam: The needle is run upward from underneath the double material, then the needle is set three or four threads back of the place where it was drawn out. It is then drawn out again six threads (sic) in front of the same point. (periodical)

Bias: A line used in the folding and cutting of cloth which runs diagonally across the goods.

Boning: The insertion of whalebone in the bodice for shaping.

Box Pleat: A pleat formed by alternating the directions of the folds.

Braid: Any material made from textile yarns used for binding or trimming widths. It may be woven, round or tubular, or plaited flat.

Cartridge Pleats: A series of very round and uniform tucks that resembles a military cartridge belt.

Cambric: Plain-weave cotton fabric, bleached or dyed in the piece.

Chain Stitch: A basic stitch made by connecting loop stitches forming links as in a chain.

Close Backstitch: (or stitched seam) A tightly backstitched seam. (periodical)

Corded Piping: An edging made by inserting the cord between a narrow bias strip and stitching it in place. It is applied to the edge of the garment in the same manner as plain piping or it can be included in the seam.

Corsage: The front part of a bodice.

Double Seaming:	Another term for a French seam. The two layers of fabric are first run together from the right side, then turned and backstitched from the wrong side. (periodical)
Faced Hem:	A hem created by sewing on a piece of fabric, in the same shape as the hem, and turning it up.
Gores:	A trapezoidal shaped skirt panel.
Homespun:	A plain weave cloth of coarse, rugged yarns, originally spun and woven on crude machinery in the home.
Interfacing:	A woven or nonwoven fabric used to provide body and substance to a garment.
Interlining:	A lining placed between the ordinary lining and the outside fabric, usually to provide extra warmth.
Knife Pleats:	Small pleats turned in the same direction to give a sharp knife effect.
Lock-Stitch:	A sewing machine stitch by which the lower thread is interlaced with the upper thread and held fast.
Overcasting Stitch:	A slanting stitch used mainly to protect raw edges from raveling or to hold edges together.
Overhand Seam:	A seam used primarily for joining two selvage or hemmed edges together. The edges are layed (sic) exactly together and the needle is worked back to front through both fabrics. Every one or two stitches, the thread is pulled tight. (periodical)
Pinking:	The process of trimming a seam in a saw-tooth edge to prevent raveling.
Running Stitch:	Small, even stitches that join together two pieces of fabric. (periodical)
Selvage:	The warp edge of a woven fabric which does not ravel because the filling yarns wrap around the warp yarns.
Slip Stitch:	Short loose stitch which is concealed between two thicknesses of cloth. It is used wherever invisible stitching is necessary.

Twilled Tape:	Rugged cotton narrow fabric or tape made with herringbone weave in a compact texture.
Twills:	Cloths that show a diagonal construction on the face of the material.
Underlining:	A lining type fabric that is cut to exactly the same shape as the outer fabric pieces. The two layers are first basted together and then (acting as one layer) seamed with the other pieces.
Waist:	The term refers to both the waistline and bodices in general.
Zouave:	A military style of decoration using strong contrasting colors and braid trim.

APPENDIX A.

THE DATA WORKSHEET

DATA WORKSHEET

Item: Dress Wrap Ensemble Garment #: _____

Date: _____

Museum: _____
(City) (State)

Garment Date: _____ Garment Donor: _____

Documented Background: _____

_____

Degree of Formality or Occasion Garment Was Worn for:

_____

Condition: _____

Label or Dressmaker Tag? _____ Home Sewn? _____

I. Garment Description: Number of Parts: _____

Silhouette:

Style Features:

Applied Decoration:

Fabrics:

Major Fashionable Fabric _____ Color _____

Subsidiary Fashionable Fabric _____ Color _____

Lining/Underlining Fabric _____ Color _____

Support Fabric _____

Thread Type _____

Other _____

II. Methods of Construction:

Major Seams (side, back, & front):

Fashionable Fabric - (stitches and seam finishes)

Lining Fabric - (stitches and seam finishes)

Minor Seams:

Princess Seams - (position, application, stitches, and finishes)

Sleeve Seams - (stitches and finishes)

Shoulder Seams - (placement, stitches, and finishes)

Armscyes - (placement, piping, stitches, finishes, and fit of sleeve cap)

Waistband - (type of band, position of opening, piping, method of reducing bulk, and method of application)

Collar - (support fabric, application to bodice, and finish)

Cuffs - (support fabric, application to sleeve, and finish)

Pockets - (lining, location on garment, method of application)

Gores and Godets: (position)

Darts: (positions, type, length, stitches, and finishes)

Support System:

Position and application ofsupport fabrics -

Boning - (type, position, and method of application)

Hems:

Skirt Hem - (hem depth, interfacing, braid, dust ruffle, facing, piping, and stitches)

Bodice Hem - (hem depth, facing, piping, and stitches)

Sleeve Hem - (hem depth, facing, piping, and stitches)

Trims: (description and method of application)

Ribbons and Tapes: (position and application)

Closures:

Hooks and Eyes - (position and application)

Buttons - (description, position, and application)

Buttonholes - (position, amount, spacing, size, orientation, distance from edge, method of construction)

Other Closures - (i.e., snaps, loops, frogs)

Miscellaneous:

III. Sketch of Garment:

APPENDIX B.

MUSEUMS THAT PARTICIPATED IN THE STUDY AND THE TYPES OF GARMENTS FOUND AT EACH

Museum	Garments
Clarke County Historical Museum Osceola, Iowa	Dress with separate skirt – 1
Grout Museum Waterloo, Iowa	Dress with attached skirt – 2 (1[1]) Dress with separate skirt – 2
Iowa State University Textiles and Clothing Dept. Ames, Iowa	Dress with attached skirt – 3 Ensemble w/attached skirt – 1 Bodice alone – 3 Wrap – 1
Marion County Historical Village Knoxville, Iowa	Dress with attached skirt – 1
Maxwell Community Historical Museum Maxwell, Iowa	Dress with attached skirt – 1 (1[1])
McGregor Historical Museum McGregor, Iowa	Dress with attached skirt – 2 Dress with separate skirt – 2
Minnesota Hist. Society St. Paul, Minnesota	Dress with attached skirt – 3 Wrap – 2 (1[1])
Nelson Pioneer Farm Oskaloosa, Iowa	Wrap – 1
Putnam Museum Davenport, Iowa	Dress with attached skirt – 5 (1[1]) Dress with separate skirt – 1 Ensemble w/attached skirt – 1 Bodice alone – 1 Wrap – 1
Rice County Historical Museum Fairbault, Minnesota	Dress with separate skirt – 1 (1[1]) Bodice alone – 1 Wrap – 1
Susie Sower House Marshalltown, Iowa	Dress attached to skirt – 1
University of Minnesota, Goldstein Gallery St. Paul, Minnesota	Dress with attached skirt – 4 Dress with separate skirt – 1 Ensemble w/separate skirt – 1 Wrap – 4

[1]Close to 1860 period by one or two years.

Museum	Garment
Washington County Hist. Society Museum Stillwater, Minnesota	Dress with attached skirt — 1

APPENDIX C.

RAILROADS IN IOWA BY 1869

Railroads in Iowa by 1869

McGregor Western

McGregor and Missouri River

Cedar Falls and Minnesota

Dubuque and Sioux City

Iowa Falls and Sioux City

Central Railway of Iowa

Dubuque Southwestern

North Western (Iowa Division)

Chicago, Rock Island, and Pacific

Burlington and Missouri River

St. Joseph and Council Bluffs

Sioux City and Pacific

Burlington, Cedar Rapids, and Minnesota

Des Moines Valley

Keokuk and St. Paul

St. Louis and Cedar Rapids

(from The census of Iowa, 1869, p. 168)