In reflecting on the significance of management history, Barbara Lawrence observed that we can use it “to sharpen our vision of the present, not the past” (1984: 307). From this perspective, management history is relevant because studying an issue in light of its past can offer valuable insights on the problem in a contemporary setting. The difficulty of women’s advancement into upper management positions, while representing one of the critical human resource issues of the decade, is not a product of modern times. A review of conditions preceding the women’s movement suggests that barriers have long existed to women’s recognition and advancement in the workplace. When women reach a certain level within a company, they sometimes hit an invisible barrier, the “glass ceiling,” which prevents their rising further. According to Morrison, White, & Velsor (1987), “the glass ceiling applies to women as a group who are kept from advancing higher because they are women” (emphasis in original).

This paper briefly examines the background and career of a remarkable management pioneer in the early twentieth century to the problems of women today. Following a brief summary of background literature on the glass ceiling, the paper reviews the early life of Lillian Gilbreth, her educational opportunities and accomplishments, and her significant achievements in a male-dominated field. Then, it examines the relationship of Gilbreth’s experiences to the challenges of women today who are attempting to break the glass ceiling.

The Glass Ceiling for Women

Although there is little question that women have made progress toward equality in the workplace, few make it to the senior levels of management. According to a recent report from the Federal Glass Ceiling Commission (1995), 95% to 97% of senior managers of Fortune 1000 industrial and Fortune 500 companies are men, yet white males make up only about 43% of the workforce. The same study reported that only 5% of senior managers in the Fortune 2000 industrial and service companies are women. These commission findings are especially striking since women make up nearly half of the workforce. A summary of studies over the 1985–1990 period revealed that the percentage of women in upper-management positions ranged from 1.1% to 5.1% (Adler & Yates, 1993). Even where women are represented in upper-management positions, they tend to be in support functions such as human resources and corporate communications, which typically pay less than sales, marketing, operations, or finance, thus limiting their career earnings (Mathis & Jackson, 1997).

Apart from upper-management roles, the proportion of women in management at any level is disproportionate to their presence in the workplace. Women hold 25% more of the management positions in only four of nine industry segments: finance, insurance, and real estate; services; retail trade; and transportation, communication, and public utilities (Glass Ceiling Commission Report, 1995).

Even though firms are spending millions of dollars each year to attempt to comply with legal requirements administered by the Equal Employment Opportunity Commission, companies continue to have problems retaining
women. One study reported that over 59% of the firms surveyed indicated moderate to great difficulty retaining women managers. Often women leave the workplace at the peak of their careers after companies have invested substantial time and money in training costs (Rosen, Miguel, & Pierce, 1989). Women have a much higher turnover rate than men, and this can hurt both the exiting employee and the firm psychologically as well as financially (Caldwell, Chatman, & O’Reilly, 1990).

While women leave organizations for various reasons, Rosen et al. (1989) found the most frequent cause to be acceptance of a similar job at another organization, followed by temporarily dropping out and changing career tracks, and third, leaving to start their own businesses. Rosener (“Through a Glass,” 1996) reported that female executives leave because they feel that their work is undervalued or that they don’t fit in, noting that they often seek more appealing opportunities in smaller firms. A major reason women leave the workplace, whether to start their own businesses or to accept a similar job at another organization, is that they receive differential treatment on the job (Morrison & Von Glinow, 1990).

**Lillian Gilbreth: The Early Years**

Lillian Gilbreth was born into a world that was inimical to women’s pursuit of careers. Women of the nineteenth century were expected to be kind and gentle homemakers who cared for their husbands and children. They were taught that qualities such as “aggression, independence, self-assertion, and curiosity were male traits” (Smith-Rosenberg, 1981: 207). Societal conventions held that a woman’s place was in the home, as women were expected to be submissive and affectionate toward men upon whom they depended for everything (Glazer & Slater, 1987). Smith-Rosenberg stated, “she was, in essence, to remain a child-woman, never developing the strengths and skills of adult autonomy” (1982: 207). During this period, the most widely accepted work for women was teaching elementary education classes or nursing (Glazer & Salter, 1987).

Lillian Gilbreth was born in 1878, the oldest child of Annie and William Moller. Her German-born father was a sugar refiner who owned a partnership in a wholesale and retail hardware business. Although Lillian grew up in a prosperous family, she faced early responsibilities of home and children because her mother was sick and frail. Besides living in constant fear that she might lose her mother, she also suffered from an unrealistic insecurity about her appearance, and she compensated for feelings of inferiority by making good grades. However, she was secure about the love of her parents. According to the Gilbreth's biographer, Edna Yost (1947), Lillian was so close to her father that he mapped out her high-school schedule each fall.

Although a dedicated and successful student in high school, Lillian was discouraged from attending college by her father and was advised to stay home and learn to keep house like her mother. However, her father gave in and agreed to let her try college for one year at the University of California, where she could continue to live at home. Although her self-confidence grew in college, she still thought she was unattractive and would never make the right marriage. When Lillian tried for a Phi Beta Kappa key and tied with a man, it is said the key was awarded to the man because he needed it more; many years later, a key was given to her (Yost, 1947). She was, however, the first woman to be asked to speak at the commencement service of her college, even though the dean cautioned her to act like a woman by wearing ruffles and speaking softly. After graduating with a degree in English, Lillian entered graduate school at Columbia University in New York with the intent of studying English under renowned professor Brander Matthews. However, he refused to teach women (Yost, 1947). Although she stayed on at Columbia, she became ill her first semester, and her father forced her to return home. She finished her master’s degree in English at the University of California and began work on her doctorate. Thus, Gilbreth began her studies in an area that was traditional for women and anticipated a teaching career which was a socially acceptable option. However, she did not have to work. Her father told her before she began college that he would support his daughters should they not marry (Yost, 1947).

**Family Life and Career Development**

Lillian had planned a life of academic studies and teaching, but her plans were to change dramatically. En route to a trip to Europe with friends, she stopped in Boston where she met Frank Gilbreth, with whom she would form a
lifetime partnership in both family and work. Frank and Lillian married on October 19, 1904, when Lillian was 25 years old, 10 years younger than Frank. Frank Gilbreth was a well-established commercial building contractor and a pioneer in the new field of scientific management, especially motion study. He believed that by eliminating wasted movements and using standardized tools and specialized workers, one could find the “one best way” to perform a job. To complement Frank’s work, Lillian gave up her study of English and shifted her doctoral study to psychology, which Frank felt would bring a human element into his work. He also thought that psychology would become more important to the study of management (Yost, 1947).

After their marriage, Frank moved Lillian back east where they lived with his mother and aunt, who remained with the couple until their deaths many years later. Yost described Frank as “an aggressive dominating male” with an ego, which made it hard for him to accept that Lillian might know more than he (1947: 130). In fact, he told her how many children they would have — a dozen! The story of their efficiency-oriented household was popularized by the book, Cheaper by the Dozen (Gilbreth and Carey, 1948). They went on to have six sons and six daughters (the second daughter died at age five). Although Lillian was publicly recognized for her work by Frederick Taylor, the father of scientific management, and by Llewellyn Cooke, one of Taylor’s disciples, it was in the context of her husband’s work.

Lillian was accustomed to being dominated by her father, and she had been reared to let her husband’s work shine over her own (Yost, 1947). Even though the situation would not appeal to many women today, she seemed to be happy with the arrangement. In fact, without Frank’s persistence and confidence in her abilities, it is possible that Lillian might never have finished her doctoral degree. When the University of California retracted its original offer to waive the requirement of one year of residence work because there was no work available in the field of industrial psychology in the West, it was Frank who decided to have Lillian’s thesis, “The Psychology of Management,” published. He could not find a publisher, however, until it was agreed that the author’s sex would remain a secret (the greatest concern of the publishers was that management was a male-dominated subject). Thus, the thesis was published in 1914 under her initials, L. M. Gilbreth. She finished her degree at Brown University in 1915, becoming the first woman to receive a doctorate in psychology (Yost, 1947).

In 1921, Lillian’s contributions were recognized with her selection for Honorary Membership in the Society of Industrial Engineers. However, during this period several influential members of the American Society of Mechanical Engineers strongly opposed acceptance of women into membership. Frank was so angry that he refused to allow her name to be presented (after his death, she was accepted as the first woman member) (Yost, 1947). For her part, Lillian was not one to seek the limelight. She felt her first responsibility was her children, and she seemed satisfied with her role as one of supporting and assisting Frank. She never even learned to drive an automobile (Yost, 1947), perhaps because she had Frank to do that for her.

Lillian’s Second Career

In 1924 Frank died suddenly of a heart attack, leaving Lillian at age 46 to provide financially and emotionally for her 11 children. Although she had exhibited little personal ambition, her first priority of providing a living for her children triggered a dramatic redirection of her life that contributed to her professional success. Because she was vitally concerned with the continuation of her husband’s work, Lillian decided to maintain their management consulting company, and became the president of Gilbreth, Inc. Within a few days of Frank’s death, Lillian sailed for Prague where she delivered their paper which Frank was to have presented. She strived to maintain and extend the business relationships they had forged. However, she found it was no small feat to gain acceptance in her own right and keep the firm going with consulting work and training programs. Large firms canceled their consulting contracts, apparently fearing that “no woman could handle the technical details of the job or command the respect and cooperation of shop foremen and workers” (Gilbreth, 1970: 95).

Confronted with almost monumental financial and personal responsibilities, Lillian became more independent. Even though she borrowed money from her mother, she was proud of the fact that she paid back every cent with interest. She also refused when friends
offered to adopt some of her children or to pay some of their educational expenses. In light of these circumstances, it is particularly impressive that all 11 children completed degrees at prestigious colleges (Yost, 1947).

According to her children, Lillian was scared of many things before Frank died, such as lightning, walking alone at night, and making public speeches. However, she lost her fears (or at least learned to deal with them effectively in the case of speeches!) and became strong and resourceful because she had to. Her children depended on it (Gilbreth & Carey, 1950).

Even though her overriding concern was to provide for her children, Lillian Gilbreth loved her work and did not do it only out of economic necessity. Due to her lack of antagonisms, she was an excellent mediator in management-worker disputes, and “her own fundamental fairness bred fairness in others” (Yost, 1947: 336). In addition to her achievements in the area of industrial psychology, which promoted more effective employee utilization and satisfaction, she extended her study to home economics, publishing works that illustrated domestic applications of scientific management to relieve some of the drudgery and inefficiencies of housework (e.g., kitchen layout and appliance design). Also, she developed methods and techniques of vocational rehabilitation to help disabled persons perform jobs effectively and retain life activities (Gotcher, 1992).

In addition to receiving many honorary degrees, she also became the first woman member of the Society of Industrial Engineers (1921), the first female member of the American Society of Mechanical Engineers, the first woman Professor of Management at Purdue University (1935) and at Newark College of Engineering, and the only woman to receive the Gilbreth Medal, the Gantt Gold Medal, and the CIOS Gold Medal (Wren, 1994). As recently as 1995, the lasting impact of Dr. Gilbreth’s contribution was recognized with her selection for the National Women’s Hall of Fame.

Breaking these glass ceilings was not an easy feat, even for one so well liked and respected. Once when she was refused admittance to the University Club in New York because she was a woman (although she had been invited and her name was on the program), she had the urge to give up. She persisted, however, and two months later received an Honorary Master of Engineering from the University of Michigan, the first woman to be awarded this honor (Yost, 1947). On another occasion, when appearing for a breakfast meeting of the American Society of Mechanical Engineers of which she was a member, she had the door closed in her face at the Engineers Club because she was a woman. Later, she was invited to the same club again; she hesitated but decided to take a chance. This time she was allowed to enter and, again, broke another glass ceiling.

**Challenges to Women in the Workplace**

Despite recent legislation such as the 1991 Amendment to the Civil Rights Act, which prohibits discrimination against women and imposes strict penalties for companies failing to comply, women in the workplace continue to face many problems. Barriers include a lack of recruitment procedures to specifically attract women, a lack of corporate development experiences for women including educational opportunities, and a lack of corporate acceptance that equal employment opportunity practices are the job of everyone in the company (U.S. Department of Labor, 1992). A 1992 study of attitudes toward women in the workplace found that negative attitudes toward women executives by their male colleagues continue to be evident (Everett, Thorne, & Danehower).

Morrison et al. (1987) identified several types of problems facing women in the workplace today. In addition to the normal pressure for job performance, women often face the pressure of having a pioneering role. Also, after spending a long day at work, most of these women still have to go home and contend with family responsibilities such as “maintaining a household, raising children, even nurturing an intimate relationship” (1987: 17). Additional obstacles confronting women include exclusion from the “old boy” networks (Ibarra, 1992; Rosen & Pierce, 1989), the absence of mentors (Noe, 1988; Rosen & Pierce, 1989), a lack of support from male colleagues and bosses, and the expectation that women will maintain their femininity (Rosen & Pierce). In addition, women must deal with and adjust to perceptual differences in leadership style between women and men (Jenson, 1987; Loden, 1985). For instance, men are seen as being more autocratic while women are viewed as being more people-oriented (Jenson, 1987; Loden, 1985; Morrison et al., 1987; Stead, 1978).
In a study of executive women who have been successful in breaking the glass ceiling, Morrison et al. (1987) found six factors to be the most important: help from someone above them in status; a record of past accomplishments; the desire to be successful; the ability to supervise and manage subordinates; the willingness to take risks; and the ability to be demanding, tough, and decisive. Although it was not necessary to have all of these traits, each of the successful women of the Morrison group exhibited at least a few.

In a study of successful women between 1890 and 1940, several common characteristics were identified. For example, all “were persons of extraordinary energy, willing and able to use their gifts, including the virtue of unusual stamina, in the projects they carved out to prove their professional worth” (Glazer & Slater. 1987: 9). All of the women also used some type of strategy to gain success in their professions. In addition, all went to graduate school, most did not marry, and those who did married late. It was thought that having children and a husband “automatically lessened women’s commitment to professional goals” (Glazer & Slater. 1987: 17).

Conclusion
Lillian Gilbreth, the first lady of management, overcame many formidable obstacles as she endeavored to support her large family after Frank’s death. While the welfare of her children was always her fundamental concern and primary motivation, she ultimately attained success and recognition in a male-dominated field. With her focus on valuing the human element and on developing productive and cooperative employer-employee relationships, she provided an important link between the scientific management movement and the social man era.

Although the social-cultural environment of the 1990s is radically different from that facing newly-widowed Lillian Gilbreth in 1924, one can gain not only inspiration, but also guidance, from the life of Lillian Gilbreth. The qualities, talents, and behaviors she exhibited may be as relevant to achievement and advancement today as then. In examining Gilbreth’s approach and efforts to reach success in her work, one can identify a number of general factors that supported her in breaking glass ceilings.

1. Lillian Gilbreth was well educated and highly knowledgeable in her field. She was a scholar and acquired expertise in the theory and practice of motion study and in the application of psychology to management.

2. She defined a professional role for herself and developed a distinctive competence. Following Frank’s death, she had to determine the most fruitful path to singularly pursue a career in management as a consultant and educator.

3. Her ability to continue to achieve in management involved a commitment to continuous learning as technology advanced and the field of management developed.

4. Lillian Gilbreth used and cultivated networks of professional associates that proved invaluable to her when she was first on her own and later to enhance opportunities throughout her later career.

5. Although it may seem superfluous to mention for one responsible for a family of 12, Lillian Gilbreth was imbued with the values of planning in both her personal and professional life. Whether writing out the scheduled activities of the children (and who was responsible for what) when she was to be out of town on a business trip or laying out her own schedule of upcoming work projects and deadlines, she realized how careful preparation was essential to accomplishing one’s goals.

6. Perhaps primarily because of the extraordinary circumstances which befell her, she developed a high degree of independence and self-reliance in continuing Frank’s and extending her own work after his death. No doubt, this characteristic played a vital role in her success.

7. An additional factor which facilitated Dr. Gilbreth’s extraordinary achievement under the circumstances was the development of a family support system. Certainly her extraordinary achievements could not have been realized without the understanding, cooperation, and assistance of her children in assuming family and household responsibilities while their mother pursued her career to provide for them.

8. Finally, Lillian Gilbreth was optimistic, dedicated, and persistent, even indomitable, in the face of an inhospitable and sometimes even hostile social and work environment. Yet her approach to dealing with conflict relied on communication to achieve understanding and cooperation rather than confrontation in seeking compliance and submission.

Women trying to break glass ceilings in management today cannot, of course, influence
all of the variables that affect their professional fate, for many institutional and situational factors fall outside their control. But for women who are developing strategies to improve their potential for success and recognition, the life experiences of Lillian Gilbreth may contain messages of contemporary relevance.

Dr. Miller's professional interests include general management, management history, human resource management, business ethics, and case research and writing. Dr. Lemons' research focuses on human resource management, organizational justice, organizational commitment, and cultural diversity.

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