Landsat Thematic Mapper scene (15km x 15km) of the Wareham area acquired from 705 km altitude. Some of the landmarks visible in this scene are Route 495 which is the grey line running from upper left to lower right and Route 195 which runs from the lower center to Route 495. The interchange is quite recognizable by its distinctive T shape. At the bottom of the image is the Wareham River. Running from the top center to lower right are a series of brightly colored orange irregular patches which are healthy cranberry bogs in this August image. This image is a rendition of the Landsat image Bands 4,5,7 displayed as red, green, blue. In this rendition, healthy chlorophyll in green vegetation reflects light strongly in the red portion of the spectrum and this is the reason for the bright orange color. The left side of the image which is a reddish brown is natural vegetation developed on glacial tills. The upper right side of the image is a portion of the Wareham Pitted Plain, which is a glacial outwash plain formed by streams issuing from the glaciers which at that time were located in the vicinity of Plymouth. The soils in this area are developed on well drained sands that support a more sparse vegetative cover. The darker brown tones are different stands of trees and scrub. One outcome of this present work is that the bogs seem to be localized along the margin of the outwash plain and the till. The tills are poorly drained and the outwash is very well drained. It appears that the soils at the boundary are more conducive to bog development. Also of note are the distribution of more or less parallel linear drainage features following the drainage of the original glacial streams. In this rendition, bodies of water are jet black due to their strong absorption of light in the infrared.
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INSIDE BACK COVER
Aerial Photo of Chatham
EDITOR'S NOTEBOOK

The Workplace Isn’t What It Used to Be

In case you haven’t noticed, the language we use to describe work in America has changed in the past few years. Terms such as downsizing, re-engineering, shareholder capitalism, total quality management, privatization, leveraged buyout and global markets are now part of the everyday lingo of Americans and are the stuff of causal party conversation. Joined with these new words, however, are a disturbing series of personal concerns as Americans face up to a new world filled with constant change, insecurity, stress and anxiety.

Whether we like it or not, the way this country worked since the end of World War II and the expectations we had about building careers for the future have been replaced by an uncertain fluidity as workers come and go from job to job and careers are viewed as multiple rather than singular. Americans have had to abandon the traditional view of lifetime employment and become independent contractors who must possess the skills and the savvy to roll with unemployment or restructuring and still stay standing at the end. When the largest employer in the United States is Manpower Inc., a temporary employment agency, it is abundantly clear that the workplace has changed.

But merely complaining about jobs going South, corporate insensitivity, forced retirements and outrageous salaries for business executives will do little other than vent steam. Like it or not the world has changed and the American worker must change as well. This doesn’t mean, however, that both the private employer and government agencies can’t lend a helping hand by offering generous severance packages, retraining scholarships, more secure pensions and health benefits that travel with the worker. Furthermore, it may be time to explore a shorter work week tied to new hiring so that more people work fewer hours. Workers can’t expect employers to lose that competitive edge, but they can expect employers and the government to provide some baseline of security and new employment opportunities.

Outside of losing a loved one, there is nothing more devastating than losing a job. Those without a place to go in the morning quickly shed their identity and eventually their self-confidence. After awhile anger sets in as door after door closes. This country is only now waking up to the ravages of the global economy as fifty year old middle managers stand in unemployment lines with fifty year old assembly line workers.

It is sad that we have done little to ease the employment crunch facing these footsoldiers of the global economy. Corporations have been so busy looking over their shoulder at the competition that they have neglected to take care of their own workers. Government has been so convinced about the benefits of free trade and deregulation that it has done little to establish a workers “safety net.” Unfortunately, it is too late to help the thousands who have become part of a throwaway economy. But now that worker insecurity has become a political issue, perhaps those who have given so much to their company only to be pink slipped in the process will have a system in place to ensure some measure of job and benefit security. It’s the least the country can do for those who made America strong.

Michael Kryzanek
Editor
CREATING AN EMPLOYEE-FRIENDLY ENVIRONMENT: Lessons for Public and Private Sector Managers

Victor S. DeSantis

Over the last decade, the American worker has remained in a constant state of economic apprehension. News reports of worker layoffs in the name of corporate downsizing have been the story of the times. And pink slips have claimed the jobs of thousands of workers, mid-level managers and front-line employees alike. Public opinion polls have documented the level of worker anxiety and frustration. In 1992, the Clinton presidential campaign reflected this uneasiness in America with their slogan, "It's the economy, stupid." There is every reason to believe that both the Clinton and Dole campaigns in 1996 will attempt to revive this rallying cry. The state of apprehension for many American workers remains firmly entrenched.

While the general tide of worker anxiety may be evident, there are many organizations across the nation that, understanding these pressures, have attempted to create positive environments for their employees. Such efforts are aimed at attracting, retaining, and promoting the highest quality workers. Innovative programs and policies aimed at increasing worker satisfaction are beginning to appear more often in the personnel systems of America's large and small companies.

As with most innovative management philosophies, the public sector has begun to understand these lessons as well, especially given the renewed interest in increasing performance levels in government. Whether you call it "reinventing government" or "results oriented government," the fact remains that public administrators have become very interested in identifying factors that affect worker satisfaction. Several national blue-ribbon commissions have issued reports in the last decade documenting the challenges that face the public sector. It should not be surprising that many of the recommendations for improving the quality and cost effectiveness of government programs deal with improving the morale and effectiveness of the public sector workforce. Undoubtedly, the budget battles of 1995 and 1996 that resulted in hundreds of thousands of federal workers being furloughed for several weeks have only further contributed to the morale problems among many government employees.

Human resource managers have discovered that one of the keys to enhancing productivity and efficiency is not tighter employee regulation and further reductions in employee programs. Instead, many organizations will attest that a more flexible, employee friendly organization can attain higher levels of productivity and employee commitment over the long run. To begin to understand how to build a better work team, it is important to begin to understand what factors influence an individual worker's level of job satisfaction. And, if we can identify the factors that motivate and satisfy the individual worker, how can we design innovative programs and policies to bring about a positive organizational environment?

WHAT DO WE KNOW ABOUT JOB SATISFACTION?

Fortunately, the literature on job satisfaction and employee motivation is broad and varied. Empirical studies have demonstrated that job satisfaction levels vary widely in the American labor force. The affect of age, tenure, salary, job type, job level, and work environment on an employee's job satisfaction has been extensively discussed in the human resources literature. While some of the classic studies show that employees generally want stable employment, opportunities for promotion, and satisfactory compensation, some more recent studies of public- and private-sector employees show that such things as
flexible work hours, social satisfaction, and the characteristics and behaviors of superiors also have an affect on the satisfaction levels of employees. The results of such studies support the idea that job satisfaction is a product of many different variables operating on the employee.

To understand job satisfaction in more precise terms, we can trace the literature to Frederick Herzberg and his associates and their classic study The Motivation to Work (1959). They developed the so-called “structural” or job-related explanation of job satisfaction, which focused on the attributes of “good” jobs as the primary factors explaining satisfaction of workers. This approach argues that two fundamental types of job characteristics are of crucial importance in attaining satisfaction among workers: the internal rewards of the job (such as having diverse and challenging work), and the external rewards of the job (such as fair compensation and fringe benefits).

Although the Herzberg model is well-documented, the more recent literature has suggesting that a worker’s personal characteristics interact with the internal and external rewards of the job depicted in the structural model. The realization that personal characteristics (age, race, sex, etc.) have a distinct affect on job satisfaction implies that job satisfaction may be more a result of the “fit” between worker needs and work requirements on the one hand and the actual job characteristics on the other.

In general, it is useful to identify four general categories of variables that might impact a worker’s job satisfaction: monetary and nonmonetary rewards; job characteristics (the nature of the task); work environment characteristics (the nature of the environment); and personal characteristics. Job characteristics are factors that primarily pertain to the job itself. They relate to the way individuals perceive the duties or tasks that comprise their jobs. Work environment characteristics, on the other hand, are those factors that are perceived to assist or hinder employees from performing their assigned tasks. They focus on the nexus which links the employee to the organization.

Monetary and nonmonetary rewards are important characteristics of any employment experience. Previous studies have found that while job satisfaction has many facets, satisfaction with the monetary compensation is one of the most important predictors. These rewards entice prospective employees and, later, promote the retention of their services. Studies have found that financial rewards and promotion possibilities contribute significantly to job satisfaction across different occupation groups. In addition, the availability of fringe benefits, such as vacation time, is another mechanism for rewarding a person for their service to the organization. Benefit packages may be even more important in the public sector since wages generally compare unfavorably with similar private sector jobs. A properly designed employee benefit package can be effective for attracting, motivating, satisfying and retaining public-sector employees. The opportunity for promotion has also been found to be an important determinant of job satisfaction. Lastly, employees are going to feel more satisfied with their job if they have a strong sense that it will continue without interruption. Research has documented that job security is significantly more important than many of the job characteristic variables.

The second category of variables involve job characteristics or the nature of the task that an employee performs. As some of the motivational literature suggests, work is an important mechanism for developing the human potential. People generally need and like jobs which make use of their talents, knowledge, and abilities. Workers who perform tasks that are high on attributes such as skill variety, job significance, autonomy, and feedback from the job, experience greater levels of job satisfaction than workers who perform jobs low on such items. Employees who regularly perform the same task are likely to feel unchallenged and unsatisfied. Similarly, self-expression has been linked to higher levels of job satisfaction.

The third set of variables are work environment characteristics. A large body of research has shown that the work environment can have a positive effect on a worker’s job satisfaction. There is little doubt that workers can be heavily impacted by the office surroundings and atmosphere and their relations with co-workers. Similarly, one can not underestimate the importance of positive relations that an employee has with their supervisor. There is growing awareness in the literature of the relationship between

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**Figure 1:**
Job Satisfaction Ratings Among Public-and Private-Sector Employees
supervisor characteristics and levels of job satisfaction, especially as it relates to how the supervisor offers feedback on employee performance. In general, people who have positive perceptions of the job environment and relate well with their fellow employees and supervisor display higher levels of job satisfaction than those workers with negative perceptions of both.

The last set of variables found in the model are the personal characteristics of the employee. Attributes such as gender, age, race, and educational attainment have been studied in relation to job satisfaction. The findings regarding gender differences, however, are inconsistent. Most recent research suggests that no clear differences exist in the job satisfaction levels of men and women. However, further research does point out that women with combined family and economic responsibilities require particular characteristics of jobs more than their male counterparts. Working women with family responsibilities respond more favorably than men to jobs that do not make excessive demands in terms of hours, overtime, commute and physical effort. Two theories have been put forth with regard to the influence of age on job satisfaction. The first view is that the relationship is best represented by a U-shaped curve. Satisfaction decreases initially and then increases with age. This may be a reflection of turnover, with unsatisfied employees leaving their positions to find more satisfying employment. The second view, well-documented in the literature, is that job satisfaction increases with age. Older employees may be better able to adjust their expectations to the returns the work can provide. As for the influence of education on job satisfaction, research has found that education may have negative effects, with a higher level of formal education contributing to reduced levels of job satisfaction.

While the literature is vast, very little research has explored the extent to which there may be differences between public- and private-sector employees. And given that the reward system in the public sector systematically differs from that of the private sector (in terms of pay, benefits and psychic value), it seems likely that studies of satisfaction levels among private-sector employees may not be applicable to public-sector employees. However, a direct comparison of the differences between the two sectors may yield a better understanding of the public sector and how we can better manage these professionals.

CURRENT RESEARCH ON PUBLIC AND PRIVATE SECTOR EMPLOYEES

In an effort to broaden the literature and assist public-sector human resource professionals, I am currently involved in a large scale project exploring job satisfaction among American workers with a faculty colleague at the University of North Texas. Much of our research relies on the National Longitudinal Surveys of Youth (NLSY), a representative sample of 12,686 men and women collected by the Ohio State University. The panel study, which began in 1979 when the panel respondents were ages 19 through 26, consists of an annual interview examining the actual work experiences, personal characteristics, and job satisfaction levels of these workers. Every four years the survey asks a detailed set of questions related to job satisfaction issues (1984, 1988, 1992). This database allows researchers to examine these workers as they progress through their careers. The first piece of this project, an examination of differences in job satisfaction among public- and private-sector employees, will be published later in 1996 in the American Review of Public Administration.

While the first project uses the 1984 survey results (participants were between 24 and 31 years old), subsequent projects will add data from 1988 and 1992 to the analysis. The survey respondents in the 1984 NLSY were asked how much they like their current job (like very much; like fairly well; dislike somewhat; dislike very much). As Figure 1 indicates, 44.8% (477) of the public-sector employees reported that they like their job very much, compared with only 35.5% employees in the private sector. Roughly 16% of private sector workers reported that disliked their jobs to some degree. This compares with the approximately 10% of the public-sector employees who claimed that they disliked their jobs to some degree.

To understand what factors contribute to job satisfaction, we explored how different characteristics might be correlated with a worker's job satisfaction. We used questions related to monetary and nonmonetary rewards, work environment characteristics, job characteristics, and personal characteristics.

The results, shown in Table 1, indicate some similarities and differences between the public and private sectors. Several of the items studied were found to be statistically important predictors of job satisfaction among both sets of employees. They are (1) doing what one does best, (2) working in pleasant surroundings, (3) having friendly co-workers, and (4) a job that is meaningful in the broader context. The implication from the research is that regardless of one's employment sector, there are certain characteristics that are important determinants of positive job satisfaction. This substantiates previous findings that employees generally want a job that

| Table 1: Correlates with Job Satisfaction Among Public and Private Sector Employees |
|--------------------------------|------------------|------------------|
| Independent Variable          | Observed Relationship |
|                               | Private | Public |
| Highest Grade Completed       | ns      | ns     |
| Marital Status                | ns      | +      |
| Pay is Good?                  | +       | +      |
| Actual Income Earned          | ns      | ns     |
| Can Do What Does Best?        | +       | +      |
| Experience Valuable?          | +       | ns     |
| Job Has Variety?              | +       | +      |
| Pleasant Surroundings?        | +       | +      |
| Friendly Co-workers?          | +       | ns     |
| Develop Friendships?          | +       | ns     |
| Job Meaningful?               | +       | +      |
| Supervisor Competent?         | ns      | +      |
| Length of Time on Job?        | +       | ns     |

Key: + positive relationship found; ns: negative relationship found; ns: variable not significant

The implication from the research is that regardless of one's employment sector, there are certain characteristics that are important determinants of positive job satisfaction. This substantiates previous findings that employees generally want a job that...
utilizes their talents and is somehow meaningful. The notion that people want to believe their job is meaningful may be increasingly important as both the public and private sectors try to attract and retain talented young employees. This research also substantiates the finding that employees desire a pleasant working environment and good relations with co-workers. While an organization may have a harder time establishing good co-worker relations, it can do a great deal in providing a good working environment.

The research also indicates several important differences between public- and private-sector employees. For private-sector employees, several variables besides those mentioned above were found to be statistically related to job satisfaction levels. As Table 1 indicates, educational attainment, perception of pay, job variety, belief that the experience is valuable, the ability to develop friendships, and length of time in a job are also important determinants of job satisfaction. Worker's perceptions regarding their pay, along with whether they felt the job had variety, and they were gaining valuable experience and making friendships were all positively linked to job satisfaction. The results also suggest a negative relationship between education and job satisfaction, which lends support for the notion that people with higher average education may be more easily frustrated and unsatisfied performing many of the simpler tasks required in their jobs, especially early in their careers when they would rather be conquering the world and leaping tall buildings.

Among the public sector employees, the additional variables found to be statistically important dealt with perceptions about supervisor competency, marital status, and actual income earned. The first two variables were positively related to levels of job satisfaction, indicating that positive opinions of your supervisor and being married were correlated with higher levels of job satisfaction. The third variable, actual income earned, had a negative correlation suggesting that as income in dollars rose, levels of job satisfaction decreased. Although difficult to interpret, since this is actual income and not the comparative perception of income, this may be a result of increased responsibility and frustration that accompanies gains in salary and rank for public-sector employees.

CONCLUSION AND IMPLICATIONS

The findings from this research seem to fall in two directions. Several of the worker and job characteristics appear to have similar impacts among both public- and private-sector employees. All workers generally seem to want a job that is important to them and society in general, a pleasant work atmosphere, friendly co-workers and task variety. While both sets of workers exhibited many similarities, they did have some clear differences. It seems that increased education has a much greater negative impact on private sector employees. As mentioned previously, this may be the result of higher differential levels between expectations and realities for younger, private-sector employees in rather unchallenging positions. The perception that pay is satisfactory was an important positive correlate with job satisfaction for private sector employees, while the actual level of income is an important negative aspect of job satisfaction among the public employees.

In the final analysis, there are obvious differences between the determinants of job satisfaction in the public and private sector. While several of the variables performed in similar fashion in both equations, a large number operated in different ways.

So what are the implications for public- and private-sector managers from these findings? First and foremost, all managers, but especially those in the public sector, need to be able to identify the factors that determine job satisfaction in younger employees so that appropriate personnel policies can be implemented to retain and attract the best and the brightest workers. Approaches to employee empowerment and quality management being experimented with may be consistent with employee's desires to have jobs that promote self-expression and personal fulfillment. As well, it may be important for managers to experiment further with programs such as job rotation and job enhancement, which offer employees more job variety and skills enhancement. Both of these areas were identified as important variables among the private sector employees. New approaches to flex-time, telecommuting, and home office allowances may also be effective approaches to increasing employee satisfaction. Finally, there is little doubt that public service is not held in high esteem by most of our country's best and brightest students. As pointed out by the National Commission on the Public Service (the Volcker Commission), just about five percent of college honor society students ranked government employment as their "most preferred employer," compared to 34 percent for large corporations. We must do a credible job of convincing these potential workers of the importance and significance of serving their fellow man through the public service. This may also point out the significance of efforts by the Clinton Administration and local initiatives such as Boston's City Year and the District of Columbia Service Corps that are aimed at tapping into the idealism of youth.

Unfortunately, given the large-scale corporate and public sector restructuring in today's environment, fostering a positive work environment may be harder than ever. The most important needs for all managers remains that we must understand and appreciate that different workers are motivated by different things. Understanding the people in the organization—their desires, needs, and aspirations—can be an effective technique for developing the entire personnel package with some degree of flexibility.
The term "struggling artist" gains new resonance when the artist in question is a female composer living before 1900. Obstacles created by church, court, educational institutions, and family greatly limited the chances of a woman's success in the field of musical composition, yet many women persisted; in fact, one of the earliest composers we know by name is Kassia, a woman of ninth-century Greece. We are fortunate that despite both the conditions of their own times and the apparent oversights of historians, we know of hundreds of women who placed musical values above personal ease, and who left us some remarkably appealing and significant works of art.

The names of some women composers have in fact become familiar to connoisseurs of art music. The work of the twelfth-century nun and visionary Hildegard of Bingen has become prominent as part of the recent commercial interest in medieval chant; Fanny Mendelssohn Hensel (sister of Felix Mendelssohn) and Clara Wieck Schumann (wife of Robert Schumann) have begun to draw attention for more than just their famous family connections. Indeed, the life stories of these women provide fascinating glimpses into social and cultural history, and their music reflects both passion and intellect. Among the many other women composers working before 1900, three more obscure individuals aptly represent both historically important musical styles and the diverse contexts of music by women composers. The inclusion of the work of Elisabeth-Claude Jacquet de la Guerre, Marianne Martinez, and Louise Farrenc could greatly enrich the standard music history canon.

Elisabeth-Claude Jacquet de la Guerre (c. 1666-1729) belongs to the Baroque period of music history, the era of George Frideric Handel and Johann Sebastian Bach. Jacquet de la Guerre could easily fit into the slot most music history courses reserve for François Couperin (1668-1733). Almost exact contemporaries, both Couperin and Jacquet de la Guerre served Louis XIV, though only Couperin secured a formal appointment. Elisabeth Jacquet first came to the attention of the king when she was only seven years old, one of several talented children brought to entertain at court; at that time, she sang difficult works at first sight, she accompanied at the keyboard, and she composed "in all keys." Louis XIV placed Jacquet in the care of his mistress, and encouraged her career by having her music performed at court and by allowing her to dedicate pieces to him. Jacquet married an organist named Martin de la Guerre and had one son; both husband and son had died by 1704, but Jacquet de la Guerre continued her musical career, giving concerts in her home that were attended by the notables of musical Paris.

Like Couperin, Jacquet de la Guerre was a masterful harpsichordist, and composed many works for that instrument, most of them short pieces in the simple binary form of the day, collected into suites. While publication dates do not reliably indicate exact times of composition, it seems notable that Couperin's first book of harpsichord pieces did not appear until he was in his forties (1713), while Jacquet de la Guerre's first book appeared when she was only twenty years old (1687). Also like Couperin, Jacquet de la Guerre wrote instrumental chamber music and both sacred and secular vocal music. She was among the first composers to write trio sonatas, a genre that would be central to the output of Couperin and Arcangelo Corelli; she was the first French woman to compose cantatas, and the only one known to have published whole books of cantatas.

Jacquet de la Guerre's Jonas, a cantata for high voice, violins, and continuo, reflects many of the important stylistic trends in Baroque music. Composed in 1708, it tells the familiar biblical story of Jonas and the whale in eight separate movements. The opening instrumental Prelude features an almost continuously moving melody in the violins, typical of the Baroque taste for relentlessly flowing melody, accompanied by a bass line marked with figures, from which continuo players (probably harpsichordist and cellist) would improvise harmonies. Next, the scene of the drama is set in a recitative, which uses a declamatory, almost speech-like vocal style to convey information necessary to the plot; similar numbers provide narrative and explanatory detail in cantatas and operas throughout the Baroque and Classical periods in music history. The subsequent movement, entirely instrumental, portrays the raging sea with energetic rhythms and a chromatic melody; Vivaldi's famous Four Seasons was not the first work to depict a
storm with frenetic violins! As in most Baroque cantatas and operas, this one uses Airs (or “arias”) to focus on single ideas or emotions; the fourth movement uses an elaborate, ornamental vocal part (accompanied by the instruments) to express the terror of a witness to the storm at sea. Subsequent recitatives and airs complete the story, creating drama and musical interest out of the standard tools of the Baroque musician, including da capo aria form, expressive ornamentation, and a sonority based on a high-pitched melody supported by the firm continuo foundation.

Jacquet de la Guerre’s qualifications as a significant composer seem clear, and the appearance of recent recordings suggests that her work may soon become better known. Her present obscurity can likely be attributed to her lack of a professional appointment, and the subsequently lesser opportunities for performance, publication, and lasting fame. Her musical accomplishments, however, may eventually overcome the handicapping circumstances of her own times, and can certainly contribute to a more complete picture of Baroque music history.

In studying the Classical period of music history, most of us learn of two giants: Joseph Haydn (1732-1809) and Wolfgang Amadeus Mozart (1756-1791). Their genius certainly merits the intense focus their lives and works have received, but it seems unfortunate that these masters have almost completely overshadowed some of the lesser, but worthwhile, musicians of their day, men like Luigi Boccherini, Anton Reicha, and William Boyce. Small wonder that we rarely hear of female Classical composers, such as Mariana von Auenbrugger, Maddalena Sirmen, and Marianne Martinez.

Martinez (1744-1812), however, had personal connections to both Haydn and Mozart, a convenient segue for the music history professor. As a young girl growing up in Vienna, Martinez lived on the third floor of a large house that included attic apartments for young professionals, including Joseph Haydn. Martinez studied composition with Haydn in daily lessons that spanned three years—an opportunity that was available to her because of her father’s prestigious position as a church diplomat and the friendship of her family with the court poet Pietro Metastasio. Much later, she would host musical evenings in her own household, whose wealth she owed to an inheritance from Metastasio; among her guests was Mozart, with whom she performed keyboard duets. She was known in Vienna as a pianist, singer, and composer, but “she never held a professional appointment, which would apparently have been unacceptable in her social class.”

Marianne von Martinez

Like Haydn and Mozart, Martinez composed sacred and secular vocal music, keyboard music, and orchestral music. Her orchestral output is small, almost certainly because the usual venue for performances of her works was her own musical soirées, or “salons,” which could not accommodate larger performing forces. In fact, it has been suggested that her true importance in music history lies in “the stimulus that she gave to the musical life of her day” in these salons, rather than in her own creative work. The phenomenon of the salon, along with the concept of “salon music,” raises a thorny issue in the study of women composers. Salons apparently originated as literary gatherings, beginning in the early seventeenth century, almost always hosted by women; they became important institutions of private music-making and hosted the premieres of many important works by Beethoven, Chopin, and others. Yet the home was generally considered “a female domain,” and the salon audience came to be viewed as an “undiscriminating clientele, composed mostly of women . . . ” Thus, the phrase “salon music” has come to suggest triviality and amateurism, with smaller works like piano pieces and songs often accorded less respect than symphonies or concerti simply on the basis of their scope. Such an unfortunate assumption would underestimate the worth not only of much music by women, but also many works by the best-known masters of musical composition: while Schubert’s Lieder and Chopin’s Nocturnes were clearly intended for the drawing-room, we find much to study and enjoy in such pieces.

Among the more serious and substantial genres of “salon music” is the piano sonata, a work usually consisting of three or four movements and employing sophisticated formal techniques. Mozart composed approximately two dozen keyboard sonatas, Haydn close to four dozen; Martinez reportedly wrote thirty-one, though most are now lost. Martinez’ Sonata in A major, composed in 1765, ably illustrates the early phases of what would become the most widely used structure in Classical and Romantic music, sonata-allegro form. The first movement presents two contrasting themes in different keys, with an artful transition between them, followed by transposition and fragmentation of both themes in a development section, then a recapitulation which restates both themes in the original key (rather than in contrasting keys); this scheme represents the basis of sonata-allegro form. Perhaps more immediately noticeable to the ear is the complex nature of Martinez’ melodies and accompaniments; they overflow with rhythmic variety and ornamentation, in
the highly decorative style associated with the Pre-Classical or “Rococo” period. Melodies tend to fall into groups of short phrases, in contrast to the more continuous thread of Baroque melody; the left-hand part varies from almost continuo-like chordal accompaniment to an equal partnership with the right-hand’s melodic and rhythmic virtuosity. The movement has both flash and logic, a balance frequently heard in the best Classical-period works.

The second movement of Martinez’ Sonata in A major uses a related key (A minor) and a simpler version of sonata-allegro form that might just as easily be classified as binary form, the structure found in many Baroque keyboard pieces; such a “transitional” form teaches us much about the evolution of musical forms and conventions. This movement also makes use of a standard accompaniment called an Alberti bass, featuring regularly alternating pitches that outline basic harmonies—a pattern frequently associated with Mozart. The third and final movement of the work combines the mood of a lively minuet (frequently found in Classical third movements) with rounded binary form, a sort of compromise between binary and sonata-allegro forms that appears throughout mid-eighteenth-century music.

A final issue to be addressed with respect to Martinez’ Sonata is whether it should be performed on the harpsichord or the newer piano. Haydn and Mozart wrote for both instruments, each changing over to the piano late in his career. While Martinez was referred to as a pianist rather than a harpsichordist as early as 1773, the Sonata in A major was published in a harpsichord anthology in 1765. Recordings are currently available on both harpsichord and on fortepiano (an early form of the piano); Martinez’ style suits both instruments well.

Though we know relatively little of Martinez, we know even less of some of her female contemporaries. Marianna von Auenbrugger (d. 1786) was another friend of both Haydn and Mozart, respected as a composer of keyboard sonatas, but absent from the standard biographical reference works in music. Amélie-Julie Candeille (1767-1834), a singer, pianist, harpsichordist, and composer, is said to have “moved with assurance in the professional, men’s world of music,” but her music is generally unavailable in scores or recordings. Several other women of the Classical period deserve further attention.

By the nineteenth century, professional and educational opportunities for women had expanded somewhat, but many women were still restrained by family objections or notions of decorum. Particularly distressing is the case of Fanny Hensel (1805-1847), whose father maintained that for her, music “must only be an ornament” and insisted that she prepare for her “real calling, the only calling of a young woman—I mean the state of a housewife ...”. Hensel’s famous brother Felix Mendelssohn discouraged her from publishing her music, asserting that she was “too much a woman for that, as is proper, and looks after her house and thinks neither about the public nor the musical world ...”. Despite these obstacles, Hensel composed hundreds of pieces of music, finally submitting a few of them to publishers in the last year of her life. Most of her works were never published; one wonders what she might have produced had she found more encouragement.

Similar objections faced many nineteenth-century women composers, along with persistent barriers in education and the professions. But more intriguing (and perhaps troubling) are the women composers who received encouragement and achieved professional successes—and yet are practically lost to history. For example, Agathe Backer-Gröndahl (1847-1907), a Norwegian concert pianist and composer, had a triumphant performing career and wrote hundreds of pieces (over one hundred of them published), in a style that has been likened to that of Mendelssohn; she even claimed that her roles as a wife and mother gave her the experience it took to become an artist. The parents of Luise Le Beau (1850-1927) moved their family more than once in order to secure the best musical environment for their daughter, who succeeded as a pianist, composer, and music critic. She composed over sixty works, in various genres, over half of them published; she earned favorable reviews, the admiration of renowned composers Johannes Brahms (1833-1897) and Franz Liszt (1811-1886), and an international award. But neither Backer-Gröndahl nor Le Beau appears in the standard musical canon today. It seems likely that their exclusion reflects the prejudicial attitudes of the nineteenth-century historians who could have preserved their legacy. Typical was a critic of Le Beau who wrote in 1883, “Certainly a man, when he finds a feminine name listed on the program of the fourth chamber music concert, would cherish a slight misgiving concerning the worth and success of this composition, for, in general, one cannot trust all that much the productive capacity of women in the area of music. From the eighteenth century until well into the twentieth, many historians claimed that women lacked the emotional control, intellectual capacity, or creative imagination that a competent composer needs. Such bias surely accounts for some of the difficulties in finding information on and music by women composers today.
Among the women whom music history textbooks have inexplicably ignored is Louise Dumont Farrenc (1804-1875), a composer, pianist, teacher, and scholar--in short, a successful woman who seems to have been accepted by the musical establishment of her day, though she is now all but forgotten. A descendant of several artists who enjoyed royal patronage, she received excellent musical training while still an adolescent. Her earliest published compositions appeared in 1825, shortly after her marriage to flutist and music publisher Aristide Farrenc. Far from stifling her professional ambitions, her marriage appears to have broadened her musical interests. She and her husband collaborated on *Le trésor des pianistes*, a multi-volume, annotated collection of keyboard music spanning three hundred years; Aristide did the historical and biographical research, while Louise played a key role in making editing decisions and wrote a detailed introduction on ornamentation. She performed regularly as a piano soloist and accompanist, and she held a position as professor of piano at the Paris Conservatoire from 1842 until 1873--the only woman musician at the Conservatoire in the nineteenth century to hold a permanent chair of this rank and importance. Her *Nonetto* (piece for nine instruments), op. 38, brought her such renown that the director of the Conservatoire "raised her salary to a level comparable to that received by male professors in the instrumental division."

Farrenc composed mostly piano and chamber music, and her Piano Quintet No. 1, op. 30 (composed in 1839), typifies her style. It combines the order and logic of Classical forms with the lyrical melodies and dramatic harmonies of the Romantic style--a balance also characteristic of the music of Brahms. Its four movements take the conventional nineteenth-century forms: sonata-allegro form for the first and last movements, a slow rondo for the second movement, and a lively scherzo for the third movement. Especially notable are the virtuoso quality of the piano part and the movement of the melody through all instruments except the double bass. The very fast scherzo, by definition a playful movement, nevertheless uses complex imitative and developmental procedures; its elfin lightness recalls Mendelssohn's style, while the aggressive syncopation of the contrasting middle section suggests a Beethovenian influence. The finale contrasts long passages of nearly perpetual motion with a typically Romantic theme marked *dolce* (sweet) and *espressivo* (expressive). Throughout the work, memorable themes, graceful modulations, and diverse textures offer ample material for analysis of the early Romantic style.

Farrenc's first Piano Quintet, along with her second work in the same genre (1840), "established Farrenc's reputation among critics and cognoscenti"; her two piano trios were also well received. Each of her three symphonies was performed more than once, and her piano *Etudes* were adopted by the Conservatoire as required study for all piano classes. Yet her fame and success in her own time did not translate into the immortality achieved by male composers who wrote in these genres, for example, Felix Mendelssohn and Robert Schumann.

Whether or not simple (and regrettable) bias explains our relative lack of knowledge concerning women composers, the situation has recently shown steady improvement, as these artists have received increasing scholarly attention. In the last ten to fifteen years, dozens of publications have addressed the general history of women in music, explored the question of gender in music and musicology, offered comprehensive studies of individual women, and provided the first modern scores--in some cases the first printed scores--for music by women. Perusal of these materials gives one a sense of significant accomplishments unheralded and enormous promise unfulfilled--even as they stimulate the scholar, musician, and/or listener to learn more about these remarkable women and their work.

In addition to Farrenc, Martínez, and Jacquet de la Guerre, many other women composers could be selected for inclusion in the standard music history canon, as representatives of important stylistic trends and for insight into some intriguing aspects of social and cultural history. On the other hand, such efforts to expand the conventional survey should not be so extensive as to skew the realities of history: until the present century, the female composer was relatively rare, and male composers created masterpieces that must continue to form the bulk of the musical canon. The in-depth study of women composers will most appropriately remain a specialty, to be addressed in an elective beyond the survey courses--an elective packed with fascinating life stories, provocative philosophical questions, and attractive music.
THREE WARS

Mike Hurley

TOMORROW, THE SUN!

"Tomorrow, the Sun!" was the last thought that crept through the mind of Pak Sook-ja as she huddled the stiff appendages of her small body closer together, her bare legs tucked under her on the frozen dirt.

She felt a jabbing chill prickling along her frail (even for an eight-year-old) form as the acidic Korean cold etched and hacked its way through her thin, torn clothes, deeper and deeper, penetrating her flesh. "Tomorrow, the sun," she thought numbly as the torpid sunlight rasped her tiny feet.

Choe Jung Suk, warm as buttered toast, heard the alarm clock singing in the next room. Abruptly it stopped, but he did not fully awaken until the starving dog, having licked and sniffed, retched, urinated, and moved on.

Sook-ja shivered as a sudden breeze iced her spine. Then, in the comfort of a merciful nothingness, her head sagged, and she crumpled onto the cold ground as the raw, freezing tongue of winter rasped her tiny feet. Choe Jung Suk jumped up and into the waiting, loving embrace.

Surrounded by the fetid smell of sleepers' sour breath, Hong Tong Sun lay wide awake, waiting for the sun to be lifted into the crisp sky. It was cold, terribly cold with a twitching chill peculiar to the Korean winter. Even lying between the big warm bodies of his hairedi and his oldest sister, the rawness found him.

"If only the sun would come up," he thought. Then grandmother would get up, remove the burnt cinder from the pot-bellied stove and light a new squat suktan briquet. And then, breakfast—warm rice—and, if he squirmed up to the stove, a meager portion of one-sided warmth.

Tong Sun jumped up and methodically shook everyone into consciousness as the first feeble rays of the winter sun shot through the bleak sky. "Haimoni," he urged, "wake up. It will be a very busy day. I must go to work."

By the side of a refuse pile in a back alley, the smaller heap that was Pak Sook-ja quivered as the morning sun danced with a thawing nibble upon her face and played hide-and-seek over her hair. A sick dog, as thin and as wretched as Sook-ja herself, cautiously crept toward her. Sook-ja giggled, perhaps for the first time in her life, as the dog's ragged tongue slapped up and down her bare feet, licking the frozen moisture from them. She squirmed, but she did not fully awaken until the starving dog, having licked and sniffed, retched, urinated, and moved on.

Sook-ja sat up, partially dried her feet with her hands and then stood up, smiling at the sun. "The sun! The hot, beautiful sun!" Perhaps some day she would marry the sun. But, no time for such idle pleasure now. It was time to go to work. If business was good, maybe she could get some scrap to eat today.

Jung Suk held her hands pressed hard against her stomach as she went out to play. She had eaten more than she should have for breakfast and was on the verge of being sick. She trundled over to the car port, climbed into the back seat of the family "Scout" and threw herself on the seat, pressing moisture from them. She squirmed, but she did not fully awaken until the starving dog, having licked and sniffed, retched, urinated, and moved on.

"Oh, but the little fire feels so good," thought Tong Sun, as he slowly ate his tiny ration of rice. "Barely enough for a working man like me to live on, but more than many." He set his empty bowl by the stove, kissed his grandmother, mother, sisters; put on his ragged dirty jacket; took his baby brother by the hand and went out into the streets. It was time to go to work.

A ragged, wretched, pathetic, filthy little figure stood on the sidewalk in front of the Grand Hotel in downtown Seoul; her clothes were tatters, her limbs covered with dirt. She moved about frantically from one passer-by to
the other, her tiny hand outstretched, crying with a weak, pitiful voice, "Ten cents! Ten cents!"

Sook-ja ran to all who passed by, but few people really saw her; she was only a ubiquitous tiny voice from somewhere around knee-level. "Hello, juctda! Hello!" she cried, pounding her jacket then helped the smaller boy and pound them with your fists. Together tall enough to be noticed, they were easier. And they're easier. Americans can't stand being touched by beggars. Strong fingers pried her hands off a pant leg or a wrist. Through it all, a tiny shivering bundle moved slowly away from the Grand Hotel. Few people had noticed her, and there had been little to eat today. Sook-ja forced her bare feet over the icy concrete sidewalk. It was time to find a place to sleep. Maybe tomorrow—

"He doesn't whine enough, mother," explained the little boy with the ragged jacket. "We did all right, but I could do better if he'd whine." He reached into his pockets and placed a small heap of dirty coins and tattered paper won into his mother's hands. "Maybe tomorrow—I could take Sissy."

"You're a good son," his mother said, running her hands through his hair. "Now come and have your supper."

"Whatever is the matter with you, Jung Suk?"

"I'm sick, mommy," she replied truthfully enough. "I don't know why," she lied.

Pak Sook-ja sat down on the frozen ground. There were tears in her eyes. Her feet were numb, but she didn't care; she couldn't feel them anymore.

Hong Tong Sun, his stomach partially satisfied with a small bowl of rice, crawled between the warm bodies of his grandmother and his oldest sister, and went to sleep.

Choe Jung Suk ran to the corner of her bedroom and relieved her belly. Then she crept back into her soft, warm bed with the big thick covers.

"It's cold—So cold!" thought Sook-ja as she huddled her small body closer together. She tucked her nearly-frozen feet under her and buried her hands between her knees. "Tomorrow, the sun," she thought as her tears turned to tiny icicles. "The hot, beautiful sun."

A rosy glow overcame Sook-ja, and she began to dream. She dreamt it was her wedding day, and she was waiting for her wang-ja, her prince on a white horse. She dreamt she was standing in a big open space where the sun was just beginning to rise.

Oh, and how warm he was—the sun—as he put a ring around her finger. The hot, beautiful sun!

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THE SERVICE OF ADDAM

Corporal Addam was the tenth man out from the road, on the left end of a sweep closing in from the southeast on a squalid assemblage of huts known as Binh Tay. Second unit was deployed to the right. The two squads were beaters, driving the enemy before them. They were the hammer to smash the foe upon the rock northwest of the village, where the rest of the company waited.

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Stomachs were filled with acid. Men were jumpy, nerves taut. Most of them sloshed through the rice paddies, but here and there a man found a dike and walked the dry edge. Addam was one of the few...until a mine blew him into the water.

Fingers twitched—jerked—and three rifles spat! unaimed. It was a sure signal for the rest of the men to empty their clips. Huts splattered. Thatched roofs flew apart. Running shadows fell. Grenades exploded. And quickly there was nothing left but smoke, fire, death, and dying.

Addam lay half in black water, red seeping out and puddling around him. His right leg was tattered, his side pierced with shrapnel.

"Frigging shit!" he cried, jaw tense, teeth clenched against the numbing nothingness that told him he ought to be in pain. "I don't want to goddamn die. Not here! Not now! Not in this fn'gging shit!"

He felt an expected hand on his shoulder and turned to look at Death. "I'm not frigging ready!" he yelled. "I don't want to go!"

Death stood in the combat uniform of an American lieutenant and looked at Addam without interest. He seemed almost normal; he might have been human. He spoke without emotion. "The choice is mine," he said.

The dying corporal tried to calm himself. He screened anger and resentment from his voice and flipped out a line he'd rehearsed fifty times a day since entering Viet Nam: "Spare me, and I will serve you."

Death laughed. "You?" he mocked. "A corporal? What can you offer me?"

"Not so fast," he protested. "I want a deal first. You might take my idea and leave me here to die."

Death cocked his head. "I like your spunk, friend," he said. "You're in no position to bargain, yet you make demands. Your temerity amuses me. Tell me more."

Addam struggled to sit up, to support his back against the muddy side of the dike. "Not now," he said, "but I guarantee you'll be pleased."

"And if not," inquired Death, leaning closely to look into the corporal's eyes, "what do you lose?"

"My life."

"Already forfeit," said Death. "Yes, but I'll go with you willingly."

Death roared with laughter. When he subsided, he shook his head. "Insufficient!" he said. "After the pain that comes before death, most come quite willingly indeed."

"Nevertheless—"

"Yes, nevertheless, I like you, Corporal Addam; there's some quality about you. I'll take a chance. What are your terms?"

"Life!" Addam cried with sudden animation. "Full recovery from my injuries within three months, and three healthy years thereafter—with an option to renew."

"And my service?"

"When we meet again I'll give you an account. If you are pleased, we can extend the contract. If not, well...."

"Done!" said the lieutenant, as he began to fade away, and only in the last moments could the corporal see the avaricious specter behind the face of Death. "I shall call upon you at eight p.m., three years and three months from this date."

Upon the instant, Corporal Addam was in good hands. A buddy applied a tourniquet to his leg, another found a medic. Within the hour he was partially patched and evacuated to Third Field Hospital in Saigon. A month later he was Stateside. In two he was marveling doctors with his recovery. By three he was discharged and commenced upon a civilian life. And thereupon began the service of ex-Corporal Addam.

He started by wallowing in the flesh pots of Chicago, where he became a glutton of overindulgence and built a tolerance to alcohol, a wall against emotion, and an appetite for sex. When he was ready, tempered as a fine instrument, he moved on to the slums and cheap tenements and public housing projects of New York. There he played in the fields of poverty, seducing wilted lilies, ungainly wallflowers, immigrant blossoms, and impressionable buds with false sincerity and promises of affection, an
easy smile, a heady lifestyle, and a handful of dollars. When his reputation began to precede him, he took to Philadelphia, and St. Louis, and San Francisco.

Those who knew something of ex-Corporal Addam said he was only making up for youth lost in Viet Nam. Others speculated that having come close to death, he was trying to experience it all as rapidly and as generously as possible. Distraught parents and relatives of those he had ravished said he was nuts and ought to be put away. Sympathetic psychologists called it a temporary manifestation of post trauma syndrome. Viet Nam vets turned their heads and tried to deal with their own problems. Only the fact that Addam kept on the move saved him from counseling or hospitalization or civil prosecution.

He was in Kansas City when his three years and three months expired.

“Well,” said Death, as he appeared in the guise of a drug enforcement agent, precisely at eight p.m., “what have you got to say for yourself?”

“Quite a bit!” Addam answered. “I’d say I’ve been an excellent servant.”

“Excellent? Why, I’ve kept an eye on you. In three years who have you sent to me? You’ve killed no one, been responsible for no deaths, started no wars, unleashed no deadly diseases. You have done nothing but dissipate yourself in drink and flesh. And yet, you call yourself excellent?”

“Ah, but consider. You ask me who I’ve killed. What would that gain you? Where is your profit? How does it enlarge your kingdom? Everyone comes to you; none escape. All are yours whether they come by my hand or another’s; whether they die by war or famine or pestilence; whether they are brought in infancy or kicking youth, or dimly find their way through the feebleness of age. In the end, all come to you! You gain nothing that you do not already possess. Humanity is like so-much money in the bank. It is already yours. You may withdraw it whenever you like.”

Death was puzzled. “My other servants—""Are like thieves!” said the ex-corporal. “They have drawn from your account and presented you with what you already had.”

It was a logic Death had never encountered before. “How then should I be served?” he asked.

“By deposits instead of withdrawals.”

In spite of his stern control, Death drooled. His mask fell away and greedy anticipation glimmered in his eyes. “And what have you deposited?” he asked.

“Sir!” said ex-Corporal Addam, in the manner of a military report, “with unflinching dedication to duty, I have fathered eighty-seven children!”

GENERAL WEYMOUTH COMES HOME

Slowly the drums beat!

Harness and leather creaked. Rifles snapped. Muffled feet thundered a muted cadence.

The crowd, mourning-banded, hushed and pulled back to clear the way. Parents lifted silent children to their shoulders. The flag, heavy with honor, flew half its mast and drooped by. Behind it came the men in dark attire, and the men in matching suits, and the widows and orphans and ministers of God, and the marching band...as slowly the drums beat!

General Weymouth was coming home.

A flat-bed truck, draped in black and festooned with blue-starred bunting, lumbered down the parade route. On the bed proudly rode the burnt and mangled wreckage—the general had died in that helicopter—and men like toy soldiers in new paint stepped solemnly by its side while slowly the drums beat!

Then came the general’s coffin, raised high on a horse-drawn caisson for all to see. Old veterans rubbed their eyes, men of age took pallor, women turned away, and children gazed in shock and disbelief.

General Weymouth had come home.

Slowly, while the drums beat, and the crowd surged behind, the procession filed its way to Wilbur Park. When everything was in order, the dignitaries took to the stand and the microphones.

“John Quincy Weymouth was one of us. He was born here in Wilburville. We nourished him, we watched him...”
grow, we touched his life as he touched ours, and we cheered him off to war. Now he has come home, his final duty done."

The speaker turned aside, nodded his head, and a functionary raised his hand. A crane near a 12-foot tall black monolith came to life, and all eyes watched as a cable turned out. Two workmen mounted the truck bed and climbed the helicopter wreckage. Together they caught the hook and guided it to an eye specially welded at the point of balance. "Thumbs up," and the crane began to reel in.

_Slowly the drums beat_ as the crashed remnant made its last flight, turning slightly in the air as it rose. The crane swung to the right and lowered its burden to the polished granite block. Other workmen, on scaffolding around the stone, guided the twisted metal into place and secured it with eight three-quarter-inch bolts slipped into pre-drilled holes. The workmen came down and quietly took the scaffolding away. All the while, _slowly the drums, slowly the drums, beat_.

The functionary received a signal and relayed it to the dignitary, who again nodded. This time, his favor produced a captain who marched, normal step, to the caisson draped in red, white, and blue bunting. "Honor Detail," he intoned in a half-whisper. "Ah-ten...hut!" Eight men snapped to attention. "Prepare to execute, by the numbers. Ready...hut!" The eight slow-stepped into position, three on each side of the caisson and one to either end. "Ready...hut!" Six reached out to take hold of handles along the sides of the coffin. The men in front and back remained stationary. "Ready...hut!" Six lifted. "Ready...hut!" Seven men moved forward, six bearing the general on his last ride. The eighth man waited until the coffin had cleared the caisson and then followed at its foot. All eight, nine with the captain, marched in somber step to a quiet cadence—as _slowly the drums, slowly the drums, slowly the drums, beat_—until they stopped by the granite rock. "Ready...hut!" And they lowered the coffin into place on a stone dais raised in front. "Ready...hut!" They released their hold and stood at attention. "Ready...hut!" And they moved to form a rank by one side.

Another signal, and a rifled squad marched to stand at parade rest on the opposite side. A bugler stood behind. "I hereby dedicate this monument to the memory of General John Quincy Weymouth. Henceforth and forever shall this playground be known as Weymouth Park."

"Ah-ten...hut! Prepare to fire."
"Ready—"
"Aim—"
"Fire!"

_And slowly the drums—_
Stopped.

_Taps filled the air..._

The dignitaries and the veterans and the soldiers, and the widows and orphans and ministers of God, and even the men of age, went away. But parents lined up to take their children past the memorial. For they had enshrined the general _in a clear glass coffin_—unwashed, burnt and broken, exactly as they had pulled him from the burning crash—that their youth might see the _glory_ with which he was covered, and the _honors_ he had earned in war.

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**A Note on previous publications:**

"Tomorrow, the Sun!" was originally published in _Z Miscellaneous_, Vol 2, #6, November 1988. It was published in Dutch translation as "Morgan, de Zon!" in _Horizon #53_ [Liedekerke, Belgium], June 1989.

"The Service of Adam" was originally published in _Crossroads #2_, June 1992.

"General Weymouth Comes Home" was originally published in Dutch translation as "De Thuiskomst van General Weymouth" in _Horizon #72_ [Liedekerke, Belgium], June 1991. _Horizon_ reprinted it, in English, in #76, February 1992. It has also been published in Segregansett Press Chapbook #7, _General Weymouth & Other War Stories_, February 1994.

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Mike Hurley is Associate Professor of English
W - A R E T R O S P E C T I V E

January, 1987

June, 1987

November, 1987

September, 1988

September, 1989

October, 1992

Spring, 1993

January, 1994

June, 1995

December, 1995
Professor Margaret Johnson of the Psychology Department is a woman of many talents and interests. A faculty member since 1976, Professor Johnson's expertise is in child development. Over the years she has taught experimental child psychology, personality, abnormal psychology and is currently exploring the emerging field of evolutionary psychology, which involves the study of how such things as courtship behavior, gender differences and personal characteristics are influenced by the evolutionary process rather than just through environmental stimuli.

But Professor Johnson's academic interests do not stop with her professional interest in child development. She is one of the College's instructors in the Freshman Seminar. Designed as a way of helping incoming students adjust to college life, the Freshman Seminar has grown in popularity as students look for ways of better understanding themselves and the world they live in. Professor Johnson is excited about her participation in the Freshman Seminar. She has seen students become more focused on college life, form better decision-making skills and have a better handle on career opportunities.

But while she is deeply committed to her teaching and her involvement with the Freshman Seminar, her love of music continues to place new demands on her time and energy. As Professor Johnson says with a ready smile, "music is my first love."

Professor Johnson started singing as a student at Macalester College in Minnesota. While pursuing doctoral studies at Boston University, she became deeply involved in choral groups such as the prestigious Boston Camerata. In 1978, just before she started a family, Professor Johnson became associated with Emmanuel Church in Boston, which she considers her musical and spiritual home. As a featured soloist and choir member, she began singing in the weekly Bach cantatas (recordings of which can now be heard on WGBH radio each Sunday), eventually touring Europe with the chorus and performing on two highly-acclaimed CDs. She also participated in recital series of Romantic and Baroque composers such as Debussy and Schuman. Also because of her high soprano voice, she was able to experiment with the chamber works of composers such as Arvo Paert and Anton Webern. Professor Johnson is especially fond of Webern's music which is noted for its complex atonal style. She has faced up to the challenges of Webern's music and finds singing his works "amazing experiences."

Besides the commitment to Emmanuel Church, Professor Johnson is also associated with a Brookline-based choral group, Jubal's Lyre. Its director, Norman Janis, takes biblical verses (primarily Psalms) and creates programs consisting of works of composers from medieval to modern times. Offering three concerts a year, Jubal's Lyre has appeared live on WGBH's "Performance" series.

Because of the joy that music brings to her, Professor Johnson is currently planning solo recitals both at Emmanuel Church and at Bridgewater. Before joining Emmanuel Church and coming to Bridgewater, Professor Johnson performed as a soloist throughout the Boston area, including recitals at Harvard. Professor Johnson hopes to be able to make a solo recording of Webern's work, which to date has had limited availability.

Since Professor Johnson is pulled in so many different directions she is looking forward to her sabbatical in Spring of 1997. During that sabbatical she will be working with noted Cambridge film maker Lisa McElaney. Professor Johnson will advise McElaney on the production of a series of films on maternal and child health care issues. Professor Johnson will provide the project with her professional insights on how parents can better help their children through difficult emotional and physical problems.

Like many of her colleagues at Bridgewater, Professor Johnson believes firmly that she has an obligation to join her professional expertise and talents with the world outside of Bridgewater. In Professor Johnson's case her music and her work in film production are just one more example of how Bridgewater faculty are reaching an ever widening audience.
FACULTY PROFILE

Susan Miskelly

Professor Susan Miskelly, Bridgewater State's Associate Professor of Speech Communication and Coach of the Forensic Team, is in the business of building courage and self-confidence; courage to stand up in front of an audience and self-confidence to engage in vigorous debate and competitive speaking.

Since 1969, Professor Miskelly has been honing the debating and public speaking skills of hundreds of Bridgewater undergraduates. During those years she has watched as her students developed into self-assured and articulate debaters capable of quickly responding to difficult questions, challenging the positions of their opponents and presenting clear and concise arguments.

Professor Miskelly is passionate about debate and her involvement with the Forensic Team. She sees her work as not just teacher/coach but also the head of a traveling family since debate requires frequent trips away from campus to attend debate competitions. This spring, for example, she was off to Western Illinois University in Macomb, Illinois with three students who qualified for the National Forensic Championship Tournament. Besides the trip to Illinois, Professor Miskelly has taken her team, which is approximately twenty students, to competitions at Suffolk University, Northeastern University, Plymouth State College in New Hampshire, and Longwood College in Virginia. During those competitions Professor Miskelly's students faced teams from local colleges and universities such as Emerson and Harvard.

Professor Miskelly feels that besides the development of communication skills and a competitive spirit, participation in the Forensic Team builds solid research capabilities. Students must immerse themselves in a wide range of topics in order to be effective speakers and debaters. This year the debate topic concerns the issue of whether the United Nations should be reorganized and should redefine its mission. In past years, topics included welfare reform and the immigration crisis.

What Professor Miskelly takes the greatest pride in is the success that her Forensic Team has achieved over the years. At a competition last semester the team came in second to West Point, while outdistancing Harvard, the University of Rhode Island, Simmons College and Northeastern University. Such success against larger and more well recognized schools has helped Bridgewater students realize that they have the ability to compete successfully on a national level.

After years of experience, Professor Miskelly has been able to convey the message to her students that success in debate is a combination of extensive research, long practice sessions and regular critiques. She has mastered the technique of pushing the students to compile the necessary research and perfecting their speaking style with hours of practice and critique. Increasingly, Professor Miskelly utilizes videotaping of debate practice sessions as a valuable tool of critique.

Because Professor Miskelly is such a dedicated champion of debate she dreams of a time when the College might expand the interest and the opportunities for the Forensic Team. To help achieve these goals she has submitted a bid to host the regional Pi Kappa Delta tournament at the College in 1998. Pi Kappa Delta is the national honorary forensic fraternity, which has an undergraduate and alumni chapter at Bridgewater. Professor Miskelly also would like to see new faculty added in the area of speech communications in order to further strengthen the forensic offerings.

But although Professor Miskelly's sites are on the future, she takes great pride in the accomplishments of her former students. Many Bridgewater competitors have gone on to successful careers in business, law and education. Many of these same students returned last year for a 25th reunion of the Forensic Team. All the graduates talked about the impact that debate had on preparing them for their careers and all were in agreement that Professor Susan Miskelly helped them build their courage and their self-confidence.
Orbiting the earth more than five hundred miles away, a series of satellites called Landsat, equipped with sophisticated imaging systems, have been snapping about 1,530 pictures every day. Over a period of more than twenty years, the satellites have sent back hundreds of thousands of pictures, covering every inch of the earth's surface. Who looks at all these pictures?

In fact, a great many people are interested in the Landsat images. Remote sensing techniques provide information that would be difficult or even impossible to obtain on the ground. Military analysts scrutinize the images to locate weapons installations, missile sites and troop movements around the world. Botanists, by looking at the distribution of trees and plants in an area, can make inferences about the composition of the soil beneath. They can also document the deforestation of tropical areas over a period of years. For example, satellite images of the Brazilian rain forests dating from 1972 show lush vegetation, while pictures of the same geographical areas in the late 80's reveal markedly diminished tree and plant life. In addition, the more recent images show the steady lengthening of a series of parallel lines which represent logging roads, penetrating ever deeper into the forest. In the U.S., scientists have used the satellite images to trace the decline of high elevation spruce-fir forests in Vermont and other northeastern states. For geologists, the Landsat images are useful in helping to distinguish different kinds of rock, locate mineral deposits and monitor volcanoes.

Scientists at Bridgewater, among them Professor Richard Enright of the Department of Earth Sciences and Geography, are interested in the Landsat images as a means of studying regional environmental problems in southeastern Massachusetts. Two CART grants have enabled Professor Enright to purchase several sets of satellite images of this region for the College.

Purchase of the images is only a first step; they must also be interpreted and processed. The Landsat images are not photographic films, but collections of digital data from across a wide range of the electromagnetic spectrum, many parts of which (such as ultraviolet and infrared waves) are not visible to the naked eye. In order to analyze and process these multispectral image data, Professor Enright uses a computer program called ENVI (Environment for Visualizing Image Data). The program allows the user to display various combinations of the seven spectral bands in the data set which correspond to different portions of the electromagnetic spectrum. By manipulating the different bands, the researcher is able to uncover small differences in spectral reflectance. He can then use color coding to highlight and enhance these differences. For example, rocks and trees have different "spectral signatures"; they reflect the light differently. By assigning contrasting colors to rocks and trees, the researcher can bring out these differences. For example, one of the images Professor Enright has processed reveals the distribution of cranberry bogs along the boundary between glacial outwash and moraine in Plymouth County (see inside front cover). Bodies of water are color coded in black and, in vivid contrast, vegetation appears as shades of orange. These different shades make it possible to identify various kinds of vegetation: groves of trees are easily distinguishable from fields and golf courses. Healthy cranberry bogs stand out in brilliant orange.

Color coding also permits the observer to distinguish the healthy cranberry plants from the less healthy ones. For example, years ago one of the bogs was divided by a dike, which was subsequently removed and the land filled in with cranberry bushes. But the remote images reveal that these bushes are less healthy than those in other parts of the bog. The reason is not known: perhaps inferior soil quality or inadequate drainage; perhaps the beginnings of a bacterial infestation. Whatever the cause, this is clearly valuable information for the cranberry growers, and Professor Enright has presented his findings to the Ocean Spray Cooperative. Similar studies conducted in other parts of the country have proved of great commercial value. NASA recently completed a remote sensing project to analyze the spread of Phylloxera, a louse that attacks the roots of grape vines, in California. Phylloxera is a particularly virulent pest which wiped out thousands of vines in France during the last century. Remote sensing enabled botanists to see which of the California vines were in the early stages of infection so that they could be destroyed.
Several Bridgewater students have participated in the Mexico projects. Last spring, Bridgewater graduate Bethany Bolles conducted field research, under Professor Enright’s supervision, which resulted in two papers presented at national meetings. This spring, students Mark Johnson and Sean Baldwin contributed to a project involving the study of the ejecta blanket and flows of the volcano Nevado de Toluca. Mark Johnson presented the results of this research at a conference in Asheville, North Carolina, on April 19. In addition, Johnson was one of twelve students selected by NASA from a field of 800 applicants to spend the summer at the Johnson Space Center in Houston as a research assistant conducting analysis of images acquired by the Clementine spacecraft.

In another current project, Professor Enright is working as part of the AVIRIS team at the Jet Propulsion Laboratory in Pasadena, California. AVIRIS is an acronym for Airborne Visible-Infrared Imaging Spectrometer, NASA’s most advanced imaging spectrometer. This precision instrument is carried in an ER-2 (U-2) aircraft flying at an altitude of 20 kilometers; each of the images it sends back to earth covers an area approximately 11 kilometers wide and 100 kilometers long. These data provide Professor Enright and his colleagues with a great deal of valuable information. They enable him to determine the moisture content of the atmosphere as well as to identify individual minerals in soils and rock, types of vegetation and their growth stage, types and abundances of algae in fresh and coastal waters, and burning fronts in forest fires.

Remote sensing is an exciting and powerful technique which holds great promise for increasing our understanding of the environment.

Barbara Apstein is Associate Editor of the Review

A color composite image of the area around Huitzuco de los Figueroa in the Sierra Madre del Sur, State of Guerrero, Mexico. The town is the grey cluster in the upper right of the image. In this rendition, healthy vegetation is green, bare soil is pink, and burned areas are dark red. Of particular note are the numerous small round sinkholes located for the most part just above the center. These sinkholes are developed by the dissolution of the Morelos limestone by rainwater. Analysis of image by Dr. Enright and student Bethany Bolles has shown that the remarkable distribution is most likely attributable to the existence of numerous large thoroughgoing faults that have served as pathways for the movement of water. The two largest faults are the straight linear features that run left to right and lower left to upper right through the cluster of sinkholes. Dr. Enright and Bethany Bolles visited the area during the spring of 1995 to collect samples and analyze the structures. Their work was presented at the annual meeting of the Geological Society of America in New Orleans.

before spreading the disease to healthy vines, an action which resulted in savings of millions of dollars for the California wine industry. Other researchers are using remote sensing to study and monitor the re-emergence of the potato blight, which wrought such devastation in Ireland during the last century.

The Landsat images are also of interest to city planners, including members of the Old Colony Planning Council, the regional planning agency for Plymouth County. The Council has conferred with Professor Enright and may utilize his data on the City of Brockton to help them evaluate the consequences of developing areas on the outskirts of the city. Large tracts of land in Brockton, one of which is on the Brockton/West Bridgewater line, are at present undeveloped. Standard maps and plot plans do not give as broad an overview of these areas as the satellite images do, nor do they show as vividly the distribution of developed land, undeveloped land and wetland.

Professor Enright has been involved in several other remote sensing projects utilizing satellite images, one of which, the NASA/JOVE project, takes place in southwestern Mexico. This research is an outgrowth of the NASA/JOVE grant that Professor Enright and his colleague, Dr. Jacek Sulankowski, received in 1993. The Mexican terrain, unlike that of Plymouth County, is mountainous and sparsely inhabited. Professor Enright is using satellite data to distinguish different types of rocks and to create geologic maps of sedimentary basins. Processing of the data has revealed, among other things, that sinkholes, areas where the rock has been dissolved by rainwater, are clustered along fault or fracture lines. Professor Enright is presently processing images of the Sierra Madre del Sur in the State of Guerrero, Mexico. (He is sorry to report that he did not find Humphrey Bogart or his burro).
The Honors Program at Bridgewater

The Honors Program at Bridgewater provides an opportunity for gifted and highly motivated students to reach their full academic potential. The senior Honors Thesis, completed under the guidance of a faculty mentor in the student's major field, is the capstone of the program.

Jennifer Jutila
Jennifer Jutila is working in securities operations with State Street Bank & Trust Company. As she pursues a career in finance, she plans to obtain a master's degree in financial analysis and hopefully utilize what she has learned of linear programming to devise optimal investment portfolios.

My studies as a mathematics major with a minor in management science culminated in an honors thesis project on linear programming. Linear programming incorporates these two fields in that it is a contemporary mathematical approach to solving complex planning problems that arise in industry, operations management, and economics. Linear programming provides a means to find the most efficient allocation of resources by using linear algebra to optimize a linear function of many variables subject to linear constraints. Its most common applications include finding the least expensive means of meeting product specifications, determining optimal production processes and/or products, finding the most efficient transportation routes, and determining the best schedules for production and sales.

Once a resource allocation problem is identified, linear programming can be applied to break it down into an objective function made up of decision variables subject to any relevant linear constraints. In other words, the first step in solving any linear programming problem would be to establish an objective, say to maximize profits. We would then identify the variables associated with the choices to be made and any constraints present. We can express both our objective and any constraints as linear functions of the decision variables. These linear functions represent the set of mathematical relationships present within the problem. By maximizing these functions using the operations defined in linear algebra, we can solve for the best mix of current resources in order to maximize profits. The same holds true for minimizing a function, say to minimize transportation costs. What is truly fascinating about linear programming problems is that with the ever increasing power of computers we can implement this solution method to solve problems involving thousands of variables and constraints. In essence, linear programming can be applied to solve even the most complex of planning problems.

To illustrate how linear programming works, let's consider a simple situation. For example, consider a stock broker trying to compile a portfolio of assets that will produce the most profit. Her situation would involve many variables, perhaps including the types of securities to purchase (i.e. common or preferred stocks, municipal or corporate bonds, treasury notes, CD's, etc.), in addition to the current market prices, interest rates, and risks associated with each. She would also be restricted by constraints such as the amount of money she has available for investing, time constraints, the availability of securities for purchase as well as regulatory approvals, and much more. Using linear programming we could mathematically deduce from all of the possible combinations of securities which would be the most profitable, while staying within the current limitations. Although this may be an oversimplified explanation of how this newer branch of mathematics works, in reality linear programming is extremely valuable simply because it can be applied to so many diverse situations. Computer programs of this solution method are currently being used to find the most efficient airport gate and terminal scheduling, telecommunication networking, and oil pipelining.

In today's day and age where we are all rushing to or from something, the most efficient path to anywhere is certainly sought after. I am grateful to Professor Hang Ling Chang of the mathematics department, who became my mentor during this project, for offering his expertise and insight. My honors thesis became the highlight of my studies at Bridgewater.
Wakem is coltish. Eliot often used this analogy to portray the innocence of the character, Maggie, is depicted as analogous to inferior animals. In the novel, Tom's "desire for mastery over the inferior animals, wild and domestic, including cockchafers, neighbors' dogs, and small sisters" is a promising attribute. Hence, the animal imagery is often used to produce satire and irony.

Just as Eliot used animal imagery to depict individuals, she also used it to depict whole segments of society. She compares the people of St. Oggs to ants and beavers, two of the most industrious and busiest creatures on earth. This analogy suggests these people's acquiescence to their programmed inherent nature. They appear not to have a Christian viewpoint, but rather a resigned acceptance of their place in the general course of things. One of George Eliot's central themes is that man's nature and his acts and deeds stretch out into the past and into the future. Man lives in a world of cause and consequence, and like the animal he will survive only if he can adapt.

Thomas Hardy also wrote about people who transgressed social bounds and used animal imagery to portray their character. His views on social order were similar to those of George Eliot. These beliefs tended to be unpopular with the general public, for they implied that man cannot create his own order; he, like the animal, is inexorably linked to a continuum from which there is no escape. One cannot hope to leap ahead, but rather one must move up the social ladder in time or in successive generations.

The main character in Jude the Obscure tried to transgress his social bounds. He is depicted as a trapped bird, thwarted in his desire to soar to new heights. Other bird imagery is used to portray pain and suffering. Sue, Jude's wife, is alluded to as a pitiful bird. Someone was always opening her cage door and "letting her go in such an obviously suicidal way." Hardy often used animal imagery to portray entrapment and suffering.

Emily Bronte, George Eliot and Thomas Hardy all used animal imagery to elucidate main characters in the novels and to reinforce major themes. All three broke with conventional Christian thought and shocked their readers with the immoral implications that man's behavior is due to inherent, atavistic impulses similar to those of animals.

In my senior year, I had the honor of being selected for the Bridgewater-at-Oxford Program on a Davis Alumni Scholarship. At Oxford, the idea for my English thesis germinated in a literature course which explored three novels: Emily Bronte's Wuthering Heights, George Eliot's The Mill on the Floss, and Thomas Hardy's Jude the Obscure. The idea of animal imagery and how it was used to define the heroes and heroines intrigued me. Drawing on my minor in philosophy, I tried to show how theories of evolution might have influenced the authors' writing in these three nineteenth-century novels.

Emily Bronte was one of the first novelists to juxtapose man and animal. Because she pre-dated evolutionists such as Herbert Spencer and Charles Darwin, Bronte obviously could not have been exposed to their scientific theories. Nevertheless, she had the foresight to recognize the inherent nature of man and animal; and she used her ideas to depict man using animal imagery.

Unlike Bronte, who could not have known of evolutionary theory, George Eliot read Darwin's, The Origin of Species. Eliot's vision of human nature was rooted in the belief that man is related to animals by his long evolutionary past. Her use of animal imagery colored her novels.

In The Mill on the Floss, the younger characters are alluded to as young animals; Maggie is kittenish, Tom is puppyish and Wakem is coltish. Eliot often used this analogy to portray the innocence of the children.

Logically, one would expect man to be placed at the apex of the evolutionary chain; however, Eliot often relegates her characters to a lower evolutionary level. Her main character, Maggie, is depicted as analogous to inferior animals. In the novel, Tom's "desire for mastery over the inferior animals,
The workplace can be a site of battles and wars, of individuals protecting their interests and defensive maneuvers, as much as the realm of international politics. The introduction of technology into a workplace can lead to distrust, confusion and the displacement of power systems. My thesis provides public administrators with a framework for analysis to handle and predict the difficulties that may result from implementing new technology.

The thesis begins by identifying three regimes that interact: the governing regime, the information systems regime and the information systems support regime. Each of these regimes are made up of actors with differing goals, fears and areas to protect.

The example of the New York City Human Resources Department stresses the importance of the managers working as facilitators to encourage communication between computer users and outside consultants. Another important lesson from the example is that use of prototype systems is important in evaluating the effectiveness of the application of technology.

The thesis goes on to examine how regime analysis could be applied to even the component level of selection. It highlights the importance of the human resources component of introducing technology into a workforce, and presents two case studies: North Attleboro, MA, where I served the computer study committee, and Bridgewater, MA, where I attended college. Both of these case studies showed the importance of involving people in the selection process and the applicability of regime analysis. I discovered that regime analysis is best suited for large questions of general guidance but becomes cumbersome at levels of analysis which are extremely fine in scale.

The thesis proved to be of both practical and academic value, and I have found its framework a valuable reference in my work.

DEBORAH J. GODDARD

Deborah J. Goddard lives and works in Boston.

In April and May of 1994, I represented BSC at an historical conference at the John F. Kennedy Library in Boston. The conference involved a group of twenty-five to fifty college students who met twice and studied the history and consequences of the 1964 Civil Rights Act. The conference was a commemoration of the thirtieth anniversary of the signing of the Act, which drastically changed the treatment of people of color in America by barring discrimination in public accommodations, facilities, and schools.

Also participating in the meetings were distinguished guests who had participated in the Civil Rights Movement. One of the guests was Dorothy Height, a black woman with whom I was unfamiliar. She had been very active in the Movement, and she made a comment that shocked me and inspired me to write my thesis: that the role women played in the Civil Rights Movement has never been recognized. She went on to say that it was a woman, Rosa Parks, who started the Movement. Moreover, the Movement would not have happened without women.

Her comment shocked me because I had been unaware of women's participation in the Civil Rights Movement of the 1960's. I remember, as a child, learning of Rosa Parks, the "poor colored lady" who was too tired to give up her seat to a white man on a segregated public bus in Montgomery, Alabama. Historical textbooks confirmed that my memory was correct. So why was Ms. Height depicting Rosa Parks as a rebel? Who were these women she mentioned as leaders of the Civil Rights Movement?

History has recorded that the leaders of the Civil Rights Movement were men, specifically Martin Luther King, Ralph Abernathy, Roy Wilkins, and Jesse Jackson. Surely, if women had led or otherwise participated, their contributions would be recognized in American history books. But I was compelled to further investigate Ms. Height's comments.

I began my research by watching a fourteen part video series, "Eyes on the Prize," a documentary about the Civil Rights Movement. Ms. Height was correct; there had been many women in the Movement. Moreover, I learned that Rosa Parks had attended college, worked part-time for the NAACP, and that her refusal to give up her seat on the bus was a planned and deliberate action aimed at sparking what became the Civil Rights Movement. As I continued my research I discovered that this country has had a rich legacy of black female political leaders. In fact, for the more than three hundred years that women of African origin have lived in the United States, they have been involved in every political movement in America.

Sadly, the achievements of these women are virtually untold in the annals of American history. Additionally, because much of the history of black people in America is orally transmitted, the precious few details available are relegated to African-American text books. A discussion of black female political history in America, however, accomplishes two purposes.

First, it substantiates the fact that black women have always participated, and have been unrecognized for their roles in, facilitating political change in America. Second, the historical perspective of black female political participation and leadership in America provides a foundation which proves that the black female leadership in the Civil Rights Movement in America was not novel or unique. Clearly, it confirmed Ms. Height's comment which became my thesis topic.

Despite the accomplishments of all the black women described in my thesis, their battle against racism and sexism continues. Despite the sweeping changes in American society facilitated by the Civil Rights Act, the efforts and achievements of black women in America are largely untold. During the three decades since the Civil Rights Act of 1964 became law, movies have been made to pay tribute to the male leaders while three centuries of black female leadership in America remains unknown. Until every historical text integrates black women into American history they will remain hobbled by the chains of societal dogma. And until all Americans recognize the role of black women in planning, igniting, and perpetuating the Civil Rights Movement, they will remain unsung heroines.
FACULTY TRAVEL

A Room With Two Views

William C. Levin

Our week in Italy would do double duty, we hoped. First, of course, Jeanne and I wanted to see the Florence of "A Room With A View," the romantic, picturesque and memorable Florence. Second, I intended to do some research for a course I teach on discrimination and prejudice, into the experiences of Jews in Italy. From childhood I had heard that, though Germany and Italy had been allies during WWII, Jews had fared better in Italy than in Germany. My course is filled with bad news about the many conditions under which people treat one another badly. I would love to be able to discuss a case in which something about a people or place could be shown to diminish, if not actually stop, hatred. Perhaps it would turn out to be something even a tourist could experience, like the reported Italian genius for mixing mild hedonism with a shoulder-shrugging, laissez-faire attitude. I would do my best to find out, without, of course, ruining our tourist experience.

Achieving the first goal took no effort at all. From our room on the Arno (our room did have a view, and a balcony from which to enjoy it), we could easily walk throughout this ancient Tuscan city. By just wandering we bumped into virtually all the great tourist attractions listed in the guidebooks. While looking for lunch at a nice, out of the way trattoria, we "happened upon" the Pitti Palace and Boboli Gardens. It was early spring and most of the gardens were in bud on that crisp, bright day. From almost anywhere in the city you can navigate by the massive dome of Florence's biggest church, called "The Duomo". Jeanne shamed me into hiking with her to the top of the dome, and the very idea of trusting my life to stone stairs that were 560 years old made my fear of heights worse. The view over the red, tile roofs of the city made it worth the gamble. Every trattoria served magnificent food and wine. (We loved that in one restaurant the waiter was still pasting the label on the "vino russo della casa" as he arrived at our table.) We learned to rebuild our energies with cafe latte, pastries and fruits lingered over at tables in the windows and sidewalk tables of nameless bars. We acted like tourists should, pointing out curiosities and stunning sights to one another, taking rolls and rolls of pictures as we wandered through Piazza della Signoria (where Miss Honeychurch fainted), Piazza della Repubblica, Mercado Centrale, Mercado di San Lorenzo, the Uffizi Gallery (home of sculpture and paintings, like Botticelli's "The Birth of Venus", we had seen only in books) and so many more. I could, of course, go on and on like this, but I imagine you get the point. We found the lovely, romantic Florence.

I hope you can understand why our visit to the Synagogue and its museum of Jewish History was delayed to the end of our visit. It turns out to have been both beautiful and sobering. It was built in the 1880's during a time of tolerance for Jews
and prosperity among that community. Now, less than a thousand Jews remain in the city to worship in one corner of the huge, ornate building. There is a guard at the gate who keeps all your belongings (even cameras) while you visit. “There is concern about terrorism,” he explained. Our tour guide sketched the history of Jews in Florence. We studied the photographs and artifacts in the small museum and gathered some literature and photographs from the small store near the exit. Much of it drifted by me, though I tried to imagine the lives described in all this.

Back at the hotel I read some of the literature we had gotten, and the quote from Miss Honeychurch began to echo a bit. The Florence we had read about in our guide books had another side. For example, during our visit to the Uffizi gallery we learned how the rich merchant families, especially the Medici’s, financed the explosion of Renaissance art and architecture that made Florence the beautiful place we were seeing. But now we also learned about the origins of the building that housed the Uffizi, and its relation to the fate of Florentine Jews. It seems that one of the Medici’s, Cosimo I, (1519-1574), Duke of Florence, had the building constructed to house the offices (uffici) from which to administer the city. But Cosimo had ambitions beyond Florence; he wanted to be Grand Duke of Tuscany. He sought the approval of Pope Pius V to expand his power, and the Pope agreed on one condition. Cosimo must stop giving Florentine Jews so much liberty. He had, for many years, given Jews the right to conduct business, including lending large amounts of money for the expansion of business and trade in the region. Threatened by Martin Luther’s Protestant Reformation, the Catholic Church was in the midst of a counter-reformation effort to cleanse Italy of what it saw as the heresy and corruption that had made it vulnerable to criticism. Part of this effort was persecution of Jews in Italy. If Cosimo would force Florentine Jews to live in a concentrated area in the city, a ghetto, Pius V would support his claim to become Grand Duke. (As a sidelight, it turns out the term “ghetto” comes from the very first concentration of Jews in an Italian urban settlement, when in Venice Jews were forced in 1516 to resettle in an area of the city that was once the site of an old foundry, or “getto” in Italian.) Cosimo did as he was required and wrote the orders that created the Florentine ghetto in the area of the city that is now called Piazza della Repubblica, and in March of 1570 was crowned by the Pope as Grand Duke of Tuscany. There, for three hundred years, the Jews of Florence remained, living greatly diminished lives and suffering the persecutions they would know as scapegoats in so much of the rest of the continent. In the mid nineteenth century the old ghetto was torn down to build the new city centre. A period of tolerance and freedom for Jews in Italy began, (during which the Synagogue of Florence was built) and continued until the rise of Fascism.

As tourists Jeanne and I had walked, dreamily, through the Uffizi and Piazza della Repubblica, soaking up beauty and memories. Of course we did not think of the ambition of Cosimo I and the price he made the Jews of Florence pay for his elevation to Grand Duke. It is only now that I understand what it would have meant to our visit had we known of the history of the place we came to love. I am certain we would not have had the fresh, naive sense of wonder at the place and the people. We now agree that we are glad not to have missed those feelings. But they were, in a sense, false and childish. No place should be experienced by adults only as a child experiences the world. We have a responsibility not to bleach the truth of the past out of the present merely so we can have a lovely time. Lucy Honeychurch saw that the people and the place were both “cruel and kind,” and managed in the end to take from Florence the romance for which she longed in repressed old England. Though Jeanne and I treasure the memories our naivete gave us, we know it would be a sin not to acknowledge that Florence and Italians, like the rest of the world, may be both cruel and kind.

William C. Levin is Associate Editor of the Review.
BOOK REVIEWS


"I HAVE SEEN THE FUTURE AND IT COMPUTES"

Charles Angell

I'm someone," Bill Gates says early in *The Road Ahead*, "who believes that because progress will come no matter what, we need to make the best of it" (4). Gates ardently believes that the computer revolution in which he has figured so hugely and from which he has made if not the best, the most, will improve everyone's quality of life. His optimism guides his conviction that this electronic technology with its compatibility, feedback, and constant innovation will permit us "to witness the realization of Adam Smith's ideal market at last" (4) where "digital information of all kinds, not just money, will be the new medium of exchange" (6). Gates persists in his theme that "capitalism, demonstrably the greatest of all constructed economic systems, has in the past decade clearly proved its advantages over the alternative systems" (183). In Gates the reader finds combined the free market entrepreneur and technocrat. It's an uneasy co-existence.

The entrepreneurial Gates recounts how he and his Microsoft co-founder Paul Allen early saw the potential for integrated circuits. He admits they were lucky in perceiving that what appeared no more than an expensive toy might become a powerful tool. That the Intel 8008 microchip would quickly evolve into the ten times more powerful 8080 chip and make possible "personal, affordable, and adaptable" computers, replacing big mainframes, fueled Gates' and Allen's ambition to write the software that would allow the new processors to operate. They succeeded, and their success has become another of America's archetypical stories of brains, pluck, hard work, and luck.

Gates views the free market as the ideal place for nurturing innovation. Though he admits the impossibility of anticipating what products consumers will select, he nonetheless argues that the capitalist market will advance progress. He suggests that technological advances in information production, transmission, and distribution will eliminate obstacles between buyers and sellers, creating what Gates calls "friction-free capitalism." In stressing the smoothness of this process, Gates will look back along the road and analogize what is happening now to what happened with earlier technological innovations. He speculates that emerging computer information technology will repeat the pattern that followed the wiring of the United States for telephones and electric lights where new applications quickly became available for these nascent technologies. Throughout *The Road Ahead* Gates implies that the road ahead will be an endless highway with few dislocations, discontinuities, and displacements.

Gates must concede that the information revolution has created anxiety among those whose employment is threatened, altered, or outright eliminated. "But," he assures the reader, "new [industries] will flourish. This will be happening over the next two or three decades, which is fast by historical standards, but may turn out to be no more disruptive than the pace at which the microprocessor revolution brought about its changes in the workplace, or the upheavals in the airline, trucking, and banking industries over the last decade." Gates' optimism that such disruption will be no more than an historical pothole in the road ahead (or a software bug to be corrected by some clever programmer) can hardly reassure the displaced workers for whom the twenty or thirty years are the prime of a working life. Gates the entrepreneur sees his road ahead leading to a city on a hill managed and maintained by electronic wizardry where all will be worthwhile and well.

As a matter of fact, Gates devotes considerable space in his chapter, "Plugged in at Home," to his personal city on a hill, the hillside home he's building overlooking Lake Washington, the Cascade Mountains, and Seattle. "A house," proclaims Gates, "is an intimate companion, or in the words of the great twentieth century architect Le Corbusier, 'a machine for living in.'" Gates the technocrat goes to some pains explaining how his intimate companion will incorporate state-of-the-art electronic machines. Here the whiz kid's fascination with gadgets, fueled by the entrepreneur's fortune, becomes the technocrat's obsession with control. Gates explains that when visitors enter his new home, they'll be "presented with an electronic pin" that attaches to their clothes and connects the visitor to all the "electronic services of the house," and "will tell the house who and where you are, and the house will use the information to try to meet and even anticipate your needs--all as unobtrusively..."
Yet, Gates mentions that his home's suite where, at the push of a button, he could listen to his favorite station. "I am certainly in no way comparing my house to San Simeon," Gates insists, "one of the West Coast's monuments to excess." Gates observes at one point in the novel that "Syntex was the first corporation to invent the 'workplace as campus.' . . . In the 1980s, corporate integration punctured the next realm of corporate life invasion at 'campuses' like Microsoft and Apple--with the next level of intrusion being that the borderline between work and life blurred to the point of unrecognizability." The intrusiveness of corporate life into personal life leads Dan to attempt a relationship with Karla, herself commitment averse. She tells Dan: "There's just so much I want to forget, Dan. I thought I was going to be a READ ONLY file. I never thought I'd be interactive."

"I said, 'Don't worry about it Karla. Because in the end we forget everything, anyway. We're human; we're amnesia machines.'"

Late in Microserfs, after Dan's mother has suffered a disabling stroke, his friend Michael suggests linking her to a computer such to help her communicate. She types out, as her first words, "I am here" and thus the machine does recover her memory and authenticate her presence. Slowly, like a child beginning to speak, she recuperates her memory and finally addresses Karla as "MY DOTTR." Dan says, just before his Mother speaks, "sometimes we all forget that the world itself is paradise, and there has been much of late to encourage that amnesia." Dan observes at one point in the novel that "Syntex was the first corporation to invent the 'workplace as campus.' . . . In the 1980s, corporate integration punctured the next realm of corporate life invasion at 'campuses' like Microsoft and Apple--with the next level of intrusion being that the borderline between work and life blurred to the point of unrecognizability." The intrusiveness of corporate life into personal life leads Dan to attempt a relationship with Karla, herself commitment averse. She tells Dan: "There's just so much I want to forget, Dan. I thought I was going to be a READ ONLY file. I never thought I'd be interactive."

"I said, 'Don't worry about it Karla. Because in the end we forget everything, anyway. We're human; we're amnesia machines.'"

Talking about his house, Gates points out how when constructing his estate San Simeon, William Randolph Hearst had several radios, each tuned to a different station, installed in the basement and routed to a receiver placed within a 15th century oak cabinet located in his private suite where, at the push of a button, he could listen to his favorite station. "I am certainly in no way comparing my house to San Simeon," Gates insists, "one of the West Coast's monuments to excess." Yet, Gates mentions that his home's database will include "more than a million still images, including photographs and reproductions of paintings." A few pages later Gates informs the reader that "the most interesting piece of 'art' I own is a scientific notebook kept by Leonardo da Vinci in the early 1500s. I've admired Leonardo since I was young because he was a genius in so many fields and so far ahead of his time. Even though what I own is a notebook of writings and drawings, rather than a painting, no reproduction could do it full justice." Fifteenth-century oak cabinet or 15th century notebook of a genius: technocratic excess can assume many forms. 

Stuck at a trade show in Las Vegas, Dan, the protagonist of Douglas Coupland's Microserfs, observes: "The real world is a porno movie. I'm convinced." Coupland displays for his readers Microsoft from the vantage of the programmers who must under deadlines produce shippable product. Bill Gates, Dan tells us, "is a moral force, a spectral force, a force that shapes, a force that molds. A force with thick, thick glasses." Dan and his programmer friends represent a cohort wholly enthralled by the information technology and the consumer marketplace it serves. They're aware they're "deficient in the having-a-life-

Charles Angell is Professor of English.
I woke up early one Saturday morning and, over coffee, started writing out my list. “Things to do by Sunday Night”, I titled it. My father would have approved. Once the work was done he’d say, “There. Don’t you feel great now that you have finally cleared the decks?” I was after that feeling, so this list would be really fearless. No leaving something off (like doing my state taxes) merely because I hate doing it. In less than fifteen minutes my list of things to do was too long for the time available to do them. In fact, it seemed longer than a list of things I had accomplished in the previous six months. And it was complex as all get out. Chores made the list just because I could think of them. Making this list was supposed to make me feel better, but it was backfiring. I needed some rules to keep things from getting out of hand, so I started a list of rules for making my list. (Yes, I realize the danger of writing a list about how to make lists. Consider yourself fairly warned.)

1) Lists should not get too long. It would probably be a good idea to have a fixed limit. Stephanie Winston (Best Organizing Tips-Simon and Schuster) says the limit for one’s “daily list” should be ten. Too arbitrary. Ronni Eisenberg (with Kate Kelly Organize Your Home! Hyperion) says to limit the number of items to the room available on the wall calendar in your kitchen. Dumb. What if you have a fat magic marker and I have one of those deadly-skinny pens? Is that fair, or what? I think the right number should be determined by the kind of person who is making the list. For me, three seems about right. I need lots of time before chores (preparation and planning for efficiency, accumulation of the right tools and materials, etc.) and after (physical and emotional recovery from the exertion). However, I also have friends whose lists often get into triple figures. They seem comforted by the mass of tasks before them, like a road map to their future weekends. Always somewhere to go. If you can deal with the guilt of carrying over list items to another day, then go for length. But I warn you, you probably won’t get them all done before the list gets lost.

2) No fair putting on your list things that you’ve already taken care of. This is cheating. Say I have this long list of stuff to do and, because I’ve done so few of them, I start listing things I’ve done days or weeks before so I can have the fun of crossing them off. After “(37) Wash the outsides of the windows on the third floor” (not done, of course) I stick in “(38) Eat lunch last Wednesday”. I then wait a few minutes before discovering it on the list (“Whoa! What have we here?”) and triumphantly crossing it off. So item #1 one everyone’s list should be “Start a list of things to do”. There. At least that’s done. Cross that baby off.

3) There should be some way of limiting the kinds of things that make a list. By my standards there should never be a real big gap between the least and most mundane items. For example, you should not have on the same list the items “Clip my toenails” and “Decide on my political philosophy”. It might help to make a list of one hundred things you feel you should do, then arrange them in increasing order of profundity (decreasing mundanity?). This will set the scale of the kinds of tasks that get your attention. Then it will be easy to keep the items in the same scale of seriousness. (By the way, if the 100th item on your list, the most meaningful task, is “clip my toenails”, you’ve got problems beyond the scope of this article.)

4) Try to avoid list items out of time order. For example, one list I made recently started with the items “1) Fix the brakes on the lawn tractor” “2) Order brake parts for the lawn tractor”. I know this to be a sneaky way to compose a long list of chores, only half of which of which can be done.

5) Sometimes we think our lists are organizing the world when, in fact, they are just listing things. Don’t get confused. To illustrate; I can list all the things in my basement, but that does not make it organized. I think we get confused about this because we humans have a talent for making up categories that have no real meaning in the world in which we live. To make this clear, let me give you some examples of lists with real
organizing principles, and then some that have what I call “organizational fog syndrome”. Here are list subjects that mean something.

a) Stuff that if I do will save me money.

b) Stuff that if I don’t take care of I will surely go to jail

c) Stuff that if I clean up (or throw out) will make it possible for me to move from one room to another without injury.

d) Stuff that has been
  a) on a list at least once before
  b) on my list for more than six months
  c) on the lists of more than three household members for three months.

e) Stuff that even people with serious physical and emotional disabilities would have gotten taken care of by now.

f) Stuff that can be done in the time remaining before we get ready to go to the movies.

g) Stuff to get rid of that will make room for new stuff I want.

Here, by contrast, are examples of lists that seem to have organizing principles, but really don’t. They give false comfort and, so, suffer from organizational fog.

a) Stuff that begins with the letters B, J or T.

b) Stuff to do that Miss McNichols, my second grade teacher, would probably want me to do.

c) Stuff that can be done left handed as well as right handed.

d) Stuff to do that I could write out in Spanish.

e) Stuff to do that involves touching brown or gray substances.

f) Stuff to do that I’ve seen done on television hospital dramas.

g) Stuff to do that is odd-numbered on my list.

h) Stuff that can be done while driving a car.

i) Stuff that is specified in three words, like “kill the cat.”

6) No positive lists. Lists are, by definition, negative, demanding, filled with things you wish to avoid. They consist of things you “gotta do.” Stuff would never make a list if it weren’t something you didn’t really want to do, so you didn’t do it and it had to be put on a list. Making a positive list like “remember to be good to yourself,” “eat some fries” or “don’t do too many things on your list of things to do” are so much goody-two-shoe blather.

7) It seems natural to put list items in order of importance, but be careful about assigning degrees of importance to different chores. The calculations can get very complicated. It is fair to count three not-very-important chores as equal to one important one, but be honest about your math. So, cleaning three dresser drawers may equal one closet, but not one basement. This is a common problem when cross-comparing lists between domestic partners. For example, I should not (it turns out) try to equate cleaning all five of my dresser drawers with Domestic Partner’s five cleanings of the cat-poop bin down in the basement. Bad idea. It also turns out to be difficult to compare chore-level phone calls and/or visits. “I’ll call my sister if you call your brother” is a tricky trade. It involves long negotiations about the mental and emotional health of relatives, and is best left off lists entirely.

8) Lastly, recognize lists for what they really are; they are feeble attempts to make us think we can get control of a world that is subject to full-bore entropy. As we get older our list-making increases because the number of things we own, operate, need to keep track of and have lost the directions to has increased proportionately with our years. Under no conditions will we ever again “clear the decks,” and we know it. So I discover in my fiftieth year that listing all the things in the basement that should be dusted, fixed, thrown out, shelved or merely identified gives me the feeling that since the chores can be listed, they can be done. I know it isn’t really true, but that isn’t the point. Lists give me hope and are the next best things to real order and control.

William C. Levin is associate Editor of the Review.
Professor Matthew Kohler of Bridgewater’s Physics Department is on a mission to make the study of his discipline more user-friendly. As a new assistant professor this year, Professor Kohler is already deeply committed to explaining the laws of the universe to a student population that probably grew up with some sort of phobia against taking a course in physics. It is a formidable task, but one that Professor Kohler doesn’t shy away from.

Professor Kohler has excellent credentials to prove his commitment to explaining the world of physics. With his Ph.D. from the University of Colorado and some post-doctoral teaching in California and New York, Professor Kohler became more and more interested in science writing for the lay person. One of his first published articles was on “Microwave Microelectronics” in which he explained the future impact of microwaves on communications systems such as cellular phones. His success with this article spurred him on to write other pieces on scientific breakthroughs and new technologies.

One of Professor Kohler’s current projects is to try and explain Einstein’s theory of relativity. Most of us know Einstein’s theory from the formula $E=mc^2$, but Professor Kohler wants to concentrate on describing the theory by using the principle of symmetry. He hopes to publish an article in the American Journal of Physics and later in lay publications on how symmetry (an advanced concept in physics) can be used as a pedagogical tool suitable for explaining Einstein’s theory to a broader audience.

Matthew Kohler, the science writer, is also Matthew Kohler the teacher. Besides Introduction to Physics and Computer Technology, Professor Kohler also teaches Digital Electronics, an interdisciplinary course with the Computer Science Department. In the future he would also like to teach a History of Physics course and an equationless Physics course for the liberal arts major.

Professor Kohler is convinced of the need to link the discipline of Physics with other disciplines and thereby bring more students into the study of this important field of science.

One of Kohler’s goals is to spread the word about Physics to a broader audience. His desire to explain the discipline of Physics with other disciplines comes from his admiration for the late Richard Feynman of Cal Tech. Feynman’s main work, “The Feynman Lectures on Physics” became an influential text that sought to explain the laws of physics at an advanced level. Professor Kohler is interested in building on the Feynman approach by writing a text in which he “talks” to high school readers who are anxious to understand the laws of the universe but who are often put off by the traditional texts in the field. Professor Kohler believes his colleagues in Physics are not doing enough to tell the story of their discipline to a lay audience. Like Feynman, Kohler readily admits that there are many mysteries in the physical world but it is important not to present physics as a mystery science.

To move forward on his mission Professor Kohler has an ambitious writing schedule planned. He would like to develop an informal college level textbook that is readable, based on problem solving, and organized around group work. He is also convinced that his text would not engage in equation “overkill,” one of the key ways that traditional texts contribute to physics phobia. In order to pursue his mission Professor Kohler has secured a $500 grant from the PALMS project in Massachusetts, which is a National Science Foundation funded effort to rethink and reform science and math education in the Commonwealth.

In conjunction with the proposed text, Professor Kohler would also like to expand his science writing to the high school level where he feels many students first face a user-unfriendly physics course. Again his emphasis will be on simplifying the presentation, not overwhelming students with data and making work sheets problems relate to the everyday experiences of students.

The energy that Professor Kohler brings to Physics is certain to make an impact on the science curriculum at Bridgewater and throughout the region. Through his commitment to explaining Physics to those who are uneasy about this subject Professor Kohler is certain to renew interest in understanding how our world works.
Crime in the United States is not just an unfortunate, and many times tragic, fact of life, it is also the source of scholarly research. Bridgewater is fortunate to have a faculty member who is on the cutting edge of crime research. Professor Daniel Lomba of the Economics Department is currently finishing his dissertation at Northeastern University. Professor Lomba's main research focus is crime spillover, which is the tendency of criminals to relocate to other areas when they face changes in the crime market in their home area.

Professor Lomba is using a combination of uniform crime reporting statistics from the FBI, U.S. census data and revenue figures from Massachusetts and the New England states that border Massachusetts (including New York) to determine the pattern of crime spillover. Lomba is bringing his economic approach to crime spillover in order to examine whether criminals who function in urban environments move out to suburban and rural areas if they encounter adverse conditions in their base of operations. Preliminary findings point to criminal behavior that is largely associated with familiar surroundings, i.e. it is unlikely that criminals will move from an urban to a suburban or rural base in order to conduct their illegal activities. The market changes that Lomba finds associated with spillover are factors such as increased police presence, neighborhood watches or decreased economic viability in a community.

Professor Lomba is finding that crime spillover must be understood in a spatial context using urban economic theory. For example, if a densely populated urban center lies next to a sparsely populated town or region, it is not correct to conclude that crime spillover will occur. Although there may be isolated instances of crime spilling over from one area to the other, criminals make rational choices about the target of their crime. Criminals are literally "fish out of water" when they move to unfamiliar settings.

Lomba’s research has major implications, particularly in connection with changes such as commuter rail expansion (as is the case in southeastern Massachusetts). There is an element of fear among those who see the arrival of the train as setting off a wave of crime spillover into towns that have never been affected by urban-based crime. Lomba’s research discounts these fears as not supported by the data.

Once his dissertation is completed Professor Lomba hopes to expand his research on crime by analyzing police conduct and the incidence of crime with tools developed in the expanding field of information economics. It is Lomba’s contention that police misconduct may fuel the fires of illegality as citizens tell themselves that if the police are acting improperly, why should they obey the law. Lomba is convinced that a new social compact between police and civilians must be developed if law and order are to prevail in our society.

The link between crime and economic theory is often not stressed in current research, but Lomba has begun playing a leading role in showing the market characteristics of crime and the economic behavior of criminals. Professor Daniel Lomba, who has already been recognized as one of the leading minority scholars by the American Economic Association, is blazing the research trail on a topic that is of growing importance to all of us.
This scene of the Chatham area of Cape Cod was acquired during the summer of 1984. It is a color composite image of bands 4, 5, 7. In this rendition healthy green vegetation appears in various shades of orange. Bare sandy soil appears grey and the golf courses are a light yellow. The Chatham Airport is located just below and to the right of the center of the image. The southern end of Nauset Beach extends from top to bottom along the right edge of the image. Shortly after this image was obtained a major Nor’easter eroded the beach at its narrowest point and created a new opening. The white “fingers” at the southern tip of Nauset Beach mark the position of previous and the current end of the beach. Note also the thin white streaks in Nauset Beach that mark the position of previous shorelines that have migrated to the south in the past.