OCCUPATIONAL SEGREGATION

AND ITS IMPACT ON WORKING WOMEN

Report of a Conference Held
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This publication is a rapporteur's report of a conference held at the Ford Foundation on occupational segregation and its impact on working women. As such, it identifies the main issues which were discussed and strategies which were recommended to address difficulties emanating from the phenomenon of occupational segregation. While the report reflects the views of the participating panelists, it does not necessarily represent the staff views or current programs of the Ford Foundation.

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ACKNOWLEDGEMENTS

We sincerely thank the Ford Foundation for holding the conference on Occupational Segregation: Impact and Strategies for Change. We are pleased by the leadership role the Ford Foundation has chosen to play in providing financial support for efforts in this critical area of equal employment opportunity for women.

It is with great pleasure that we also acknowledge the participants of this conference, who provided much valued grist for the mill of conversation and debate around issues of occupational segregation and its impact on working women. Their names appear many times in this report and also can be found along with their organizational affiliations in the appendices. In addition, we appreciate several participants' careful reading and critical comments on an earlier draft of this report which assured an accurate rendition of the proceedings of the conference.

Finally, we want to express deeply felt gratitude to the women whose administrative and technical efforts made the conference and this report possible. Nancy Perlman, Ronnie Steinberg, and Amy Vance shaped the conference agenda and list of participants. The arrangements for the conference were made by Nan Carroll at the Center for Women in Government, who worked with Jenny Anadei at the Ford Foundation. Tapes of the conference proceedings were transcribed by Caren Weiner. Alex Reese and Paulette Moak of the Center for Women in Government typed various early drafts of this document, and both Cheryl McCarthran and Judith Kane of the Institute for Government and Policy Studies "word processed" the final drafts.

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PREFACE

In the past 20 years, some progress has been made toward employment equality between the sexes. For example, women participate in the workforce in ever increasing numbers; women are entering managerial ranks and are moving into professional careers such as medicine and law; and small numbers of women are now found in most skilled trades. At times it appears that we are approaching equality.

The fact is, however, that women and men are statistically no more likely to be in the same occupations than they were immediately after World War II. Occupational segregation remains pervasive.

The conference reported in this document addressed this problem. Policy-makers, activists, researchers and foundation staff members discussed occupational segregation, its sources, impact and potential remedies.

The conference was important for another reason. Although employment inequality remains, we face a sharply diminishing supply of government money to fund programs that would improve women's employment opportunities. Whether we are involved in research or social change programs, we are becoming more dependent on foundation funding to create and continue essential efforts to improve the status of women. Given this new reality, the conference represents an attempt to establish a framework for making both programmatic and funding decisions.

We at the Center for Women in Government were delighted to have had the opportunity to bring the conference participants together and to prepare this report. We believe the conference addressed critical issues concerning women's employment and pointed the way toward their resolution.

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I. INTRODUCTION

Men and women do different work in our society. This is true whether one looks at occupations, industries, firms, or jobs. Throughout this century the index of occupations segregation, a measure of the extent to which workers do different work, has consistently registered above 60.[1] This means that over 60 percent of women would have to change occupations in order to be distributed among occupations as men are. The fact that men and women are occupationally segregated has serious economic, social, and political consequences. Primary among these is the wage gap between men and women.[2] However, women also suffer from fewer opportunities for advancement, higher unemployment, lower rates of unionization, and are more likely to be part-time workers, rarely receiving fringe benefits or training opportunities.

Occupational segregation and its consequences for women are naturally of great concern to those interested in improving the position of women in the labor force. Consequently, the Ford Foundation asked the Center for Women in Government to convene a small, invitational, working conference to discuss strategies for combatting sex segregation and the multiple inequalities that derive from it. More specifically, the purpose of the conference was to bring together activists, social scientists, and policymakers to assess efforts to eliminate occupational segregation, and to identify the types of activities

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[1] The index of occupational segregation represents the minimum proportion of workers of either sex who would have to change occupations in order for the occupational distribution of both sexes to be the same.

[2] Currently, women employed full-time, year round earn approximately $.60 for every dollar earned by similarly employed men.

that need to be undertaken to bring about substantial improvement for women in the labor force during the next decade.[3] (The conference agenda and list of participants are attached as Appendix A.)

This report summarizes the proceedings of the conference, highlighting research and action projects which conference participants recommended. It is organized into six sections. Following this introduction we provide a background section which reviews the various forms of sex-based employment segregation and provides a brief overview of trends in women's employment, based on a paper prepared for this conference by Heidi Hartmann and Barbara Reskin. (The revised paper is included as Appendix B.)

The third section addresses the theme of non-traditional occupations for women, one of the two major themes of the agenda. It examines the factors affecting female entry into predominantly male occupations, such as pre-training experiences, training, and institutional barriers, as well as the possibility of a previously segregated occupation becoming integrated and then resegregating in favor of the newly entered group.

The fourth section addresses the theme of female intensive occupations. Two sub-themes discussed by conference participants were the impact of the new technology on clerical work and the pay inequity which exists between jobs traditionally done by women and those with comparable levels of skill, effort, and responsibility, but traditionally done by men.

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[3]The conference participants were selected with an eye toward accomplishing two goals: first, to draw together a group of individuals that were diverse in terms of experience and perspective, yet who shared basic assumptions about the presence of occupational segregation; and second, to promote an exchange among individuals, each of whom had made a recognized contribution to the understanding and development of equal employment based on practical experience, research, or implementation of equal employment programs or policy.

The fifth section addresses three issue areas which evolved out of conference discussion and cross-cut the two major agenda themes. They are: the conflict between work and family responsibilities, the role of government enforcement and monitoring, and educating and organizing for change. The concluding section draws together some general insights underlying the conference discussion and recommendations for projects.

Throughout the conference, participants were asked to ground their discussion with concrete recommendations for further research and action. We have organized these recommendations by issue area and have listed them immediately after the relevant discussion summary.

II. BACKGROUND

The Terminology of Segregation

In preparing for the conference and in writing this report, we discovered great variation in terminology describing the nature and scope of sex segregation in employment. Therefore, we begin this report by distinguishing between four types of employment segregation: occupational, industrial, firm, and job.

Occupational segregation is the most widely used and broadly understood term which describes sex segregation in employment. It refers simply to the degree to which men and women are in different occupations. The broader understanding of occupational segregation is due in part to the prevalence of occupational level data. Both the Bureau of the Census and the Bureau of Labor Statistics report data for occupational categories and these data are frequently used to produce the indices of occupational segregation referred to earlier. Because occupations cross all of the other categories (industry, firm, and job), occupational segregation is the broadest of the four categories. It is also the type of sex segregation in employment upon which the conference primarily focused and about which this report is written.

At times throughout the conference, however, examples of sex segregation by industry, firm, and job were also discussed, and so will be briefly defined here. Industrial segregation refers to the predominance of men or women employed in different industries. High technology industries, for instance, are reported predominantly to employ males, while lower technology industries are more likely to be female intensive.

Within specific industries, firm segregation occurs even though the occupations represented may be similar. Men are more likely to be employed

in high-paying firms while women are more likely to be employed in low-paying firms. For example, within the health care industry, salaried female physicians are more likely to be employed in veteran's and other public sector hospitals while salaried non-minority male physicians are more likely to be employed private sector hospitals.[4]

Finally, the most narrow form of segregation, job segregation, refers to the situation in which women and men are in different jobs even within well defined occupations, industries, and firms. For example, within a particular college or university women may be more likely to be professors of English, while men may be more likely to be professors of economics. The designation of job segregation is sometimes used as a synonym for occupational segregation or as an all-encompassing term referring broadly to all types of employment segregation. However, in this report, job segregation is used in only its narrowest sense.

The designation of these four types of sex segregation is not merely an exercise in rhetoric. The distinction provides an important tool for fully understanding and describing the process of sex segregation in employment. The closer examination of specific types of employment segregation can highlight differences which might otherwise go unnoticed. For instance, an industry may appear to have equal proportions of female and male employees. However, further examination may reveal that the low-paying or public firms within the industry are much more female intensive, while the higher paying or private firms are male dominated. Thus, the identification of patterns of sex segregation in the labor market and the categories we develop to describe it

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[4]Salaried minority male physicians are also more likely to be employed in the public sector than are non-minority males in this occupational category.

carry important consequences for a research and action agenda that aims to reduce, if not eliminate, the phenomenon.

Patterns of Sex Segregation and Its Consequences

Heidi Hartmann and Barbara Reskin opened the conference discussion by presenting the major conclusions from their background paper which synthesizes the existing literature on occupational segregation (Appendix B). Their remarks, along with their paper, served as a foundation for our discussion throughout the conference. Among their conclusions were:

- The labor force participation rates of men and women are converging, especially when the rates are broken down by age group. For example, the proportion of employed men ages 18-24 has fairly constantly remained between 70 and 80 percent. In 1979, almost 70 percent of all women 20 to 24 were employed, compared to 46 percent in 1955. Many would expect that as women's labor force participation increased, previously sex-segregated occupations would become more integrated.

- Despite women's increased labor force participation, sex segregation of occupations remains remarkably stable. The majority of women entering the labor force have been channeled into expanding traditionally female occupations, primarily in clerical occupations and in the sales and service sectors. Thus, their added numbers tend to offset the limited progress which has been made in integrating male-dominated occupations.

- The sex segregation of occupations is compounded by racial differences. Minority women are more likely than non-minority women to hold jobs in what we think of as typical female occupations. Interestingly, when typically female intensive occupations become more integrated by sex, it is often because of the disproportionate entry of minority men.

- The wage gap between men and women has also been clearly documented: women employed full-time year-round currently earn on average about $.60 for every $1 earned by similarly employed men. Less than half of this difference can be accounted for by human capital variables such as education, training, and labor force experience. Occupational segregation has been found to contribute substantially to this wage disparity.

- The tendency to blame women for the link between occupational segregation and the wage gap must be avoided. This includes the explanation that women prefer to do traditional female intensive jobs. Although most women do expect to be in female intensive occupations, their aspirations may not be limited to these jobs. Evidence for this is provided when women gain new access to opportunity structures and these are widely publicized, women eagerly enter the new occupational fields in large numbers.

III. NON-TRADITIONAL JOBS FOR WOMEN

One of the primary strategies to decrease segregation has been to facilitate the movement of women into occupations traditionally occupied by men, often called "non-traditional occupations" or NTO's. Non-traditional occupations for women was the first major topic considered by conference participants. Opening remarks were made by Sue Berryman and Alexis Herman.

Equal employment opportunity (EEO) policy has historically placed a strong priority on increasing the freedom of occupational choice for both sexes, an objective initially raised at the conference by Sue Berryman. Three policy objectives have been associated with this larger goal of increasing choice. They are: first, modifying the way organizations recruit, select, assign, train, and promote employees; second, changing women's attitudes and expectations concerning paid employment, primarily through pre-employment training; and third, increasing their range of skills. Policies designed with these objectives would ideally lead to a more integrated labor market in which the wage gap would be substantially reduced. The stability of both occupational segregation and the wage gap even after 17 years of EEO policy, however prompted conference participants to raise questions concerning the process of integrating women into occupations traditionally filled by men. The discussion divided into two sub-themes: first, factors affecting female entry into predominantly male occupations; and second, the likelihood of a newly integrated occupation resegregating in favor of the newly entered group, after a significant number of that group entered.

Factors Affecting Female Entry Into Predominantly Male Occupations

The factors affecting female entry into non-traditional occupations can be grouped into three categories: pre-training experiences, training and employment programs, and institutional barriers to entry.

Pre-training Experiences: The discussion of pre-training experiences addressed the process of women's career choices and the issue of adequate educational preparation for NTO's. Clearly we need an understanding of the process of career choice and possible points of intervention for the effective recruitment of women into occupations traditionally dominated by men. For instance, Alexis Herman suggested that both school and parents are significant influences which can facilitate non-traditional career choice among young women. Herman discussed on-going pilot projects which educate parents concerning the future income needs their daughters may have as adults. Faced with these realities, parents who might otherwise encourage traditional career choices become more supportive of non-traditional occupations. Further, young women who are exposed to non-traditional occupations as part of their high school curriculum are significantly more likely than others to make non-traditional choices.

To successfully recruit adult women into non-traditional occupations, Sharon Bahn indicated the importance of addressing women's interests and concerns, particularly in terms of financial opportunities and occupational challenges. Many women in traditional jobs welcome the opportunity to move from their relatively low paid occupations, often with attenuated career ladders, into occupations with better financial rewards and advancement opportunities.

Hartmann and Reskin noted the importance of realistically portraying the work demands and work settings in recruitment and pre-employment programs.

This can be accomplished through the use of slides, tours, and opportunities to talk to people doing these jobs. Berryman noted that the military often engages in such advance preparation that could be used as a model for other programs. Exposure to actual experience in non-traditional work and work settings, as already noted regarding high school women, also increases the likelihood that adult women will choose non-traditional careers. Furthermore, such pre-training increases the retention of women in these occupations. The women can more realistically appraise what they will experience on the job and, through earlier exposure to the tools and techniques of the job, they can enter on a more equal footing with men. This pre-training is also important for reducing the potential of hostility from male co-workers, who may be especially resistant to women they judge as unqualified.

For many male dominated occupations, there is a need to adequately prepare women prior to their entry into the work setting. For instance, appropriate educational preparation is particularly important in high technology fields which constitute the largest proportion of expanding male dominated occupations. For entry into high technology jobs, conference participants consistently stressed the importance of women's adequate preparation in mathematics and science. Unfortunately, women are still underrepresented in most advanced mathematics and science courses at the secondary school level.

Participants stressed focusing energies on integrating jobs in high technology fields rather than on integrating other male dominated occupations where there is currently substantial unemployment or a projected low rate of growth. However, Bahn drew our attention to an interesting dilemma in this regard. She noted that a focus on new jobs in these high technology industries, such as electronics, may mean placing women in occupations which

are still being defined and where the career ladders remain unclear. It is possible that, as women enter these new occupations, employers will divide them into sex segregated sub-occupations. Without adequate planning the new career ladders dominated by women could again become shorter and receive lower levels of compensation than those dominated by men. Thus far, this has not occurred and women have been able to move into integrated technical career ladders. The possibility of occupational resegregation is discussed more fully below.

Training and Employment Programs: The assessment of factors contributing to the success of training programs for non-traditional occupations is important as government support for such programs declines.[5] Ronnie Steinberg noted that such documentation and analysis is already underway at the Center for Women in Goverment. This is timely since Herman reported that a number of effective programs have already lost funding because they did not reach the mandated statistical objectives used to document success, such as an appropriate number of placements or proportional increases in income. She noted that to move women into male dominated occupations requires not only training and placement, but counseling and support services, such as transportation and child care, as well. Although they may greatly improve job retention, the funding for these support services may not appear important if the emphasis remains only on placement and income.

Participants concurred with Herman's sense of the need to develop more creative measures to evaluate the success of NTO training programs. If rapid

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[5]None of the major proposals for the replacement of C.E.T.A. legislation approximates the level of 1982 funding. More importantly, as presently drafted, none of the bills targets women, displaced homemakers or non-traditional recruitment as C.E.T.A. has since 1978.

placement continues to be emphasized in government-sponsored training programs, women are more likely to be channeled into traditional female occupations than into NTO's. Also, assessing the impact of female entry into non-traditional occupations by looking only at short-term increases in income is problematic. Many entry level jobs in male dominated occupations have wages or salaries similar to those in female dominated occupations. However, as conference participants indicated, the potential wages are generally higher and the career ladders may be longer in non-traditional fields. More creative and meaningful assessments of success might take these long-term career patterns into account. Additional factors which might be considered are special outreach programs to bring non-traditional opportunities to the attention of women, support services such as child care and transportation, and the creation of special routes for moving from traditional to non-traditional jobs.

A crucial element in the success of non-traditional training appears to be the proportion of females in the program. Bahn suggested that when women comprise the majority of NTO trainees, they are more likely to be among people who have similar backgrounds, education, and experience. This can substantially decrease anxiety and increase learning. Agreeing with Bahn on the importance of considering the sex ratio of trainees, Bonnie Cohen noted that managerial training programs for women also appear to be most successful when women are in the majority. It is reinforcing for trainees to interact with other women with similar career aspirations, and on-going support groups frequently emerge as a result of the training program. Bahn also suggested that training programs may be most successful when they are short-term and intensive. Such programs allow women to enter jobs more quickly where they may get additional on-the-job or classroom training, perhaps partially paid for by the new employer.

Institutional Barriers to Women's Entry: Hartmann and Reskin emphasized the critical role of institutional barriers in constricting women's entry into occupations where men have predominated. First they pointed to restrictions on women which originate in laws and regulations. These include: veterans preference laws which reduce women's access to certain jobs; weight-lifting restrictions which continue to be used to segregate jobs in some firms even though this is illegal under Title VII; and the exclusion of women of child-bearing years from many jobs historically held by males, exclusion based on such things as the risk of exposure to toxic substances.[6]

Second, institutional barriers also exist in organizational policies and procedures. Hartmann and Reskin isolated personnel procedures which have unintended segregative effects. For instance, certain negotiated seniority systems and bidding practices prevent or deter women from applying for many skilled blue-collar jobs. Similarly, as Center for Women in Government research has highlighted, eligibility requirements specifying experience in specific jobs may inhibit the advancement of women within large work organizations with highly articulated internal labor markets.[7]

A third important barrier to women entering specific occupations may be the lack of perceived access. The perception that an occupation is accessible

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[6]Yet, ironically, employers frequently ignore the hazards to which women in traditionally female jobs are exposed.

[7]An internal labor market is one in which, within an administrative unit or a large work organization, the pricing and allocation of labor is governed by a set of administrative rules and procedures. It is connected to an external labor market (outside of the unit) by job titles which are called ports of entry or exit. The remainder of job titles within the internal market are filled by the promotion or transfer of workers who have already gained entry through these ports. Consequently, within an internal labor market, employees are simultaneously protected from direct competition with the external market and constrained by the specified routes to advancement.

is related to many factors, including not only the behavior of potential employers, but also mass media attention. Media attention is an extremely effective outreach mechanism which is frequently a serendipitous result of enforcement and litigation. For instance, media-developed public awareness of Title IX enforcement helped to integrate the professional schools, i.e., law, medicine, engineering. Media attention to litigation also had an effect on integrating the occupations of telephone installers and repair persons. Similarly, the integration of mines and banking was facilitated by publicizing federal contract compliance rulings. Hartmann and Reskin reported on a survey of firms which demonstrates that managerial awareness of federal anti-discrimination laws and litigation was an important factor facilitating the movement of women into previously male dominated jobs.

Fourth, we discussed the perceived or expected discomfort of situations in which men and women are placed in the same workgroup as another barrier to integrating occupations. As a consequence of this barrier, several conference participants observed that many of the male dominated occupations that women have entered in substantial numbers, are those in which people do not work closely with other workers (e.g., bus driver, real estate agent, bartender, dispatcher, mail carrier).[8] Thus, although statistically an occupation may become integrated, there may be little integration of work groups. As Dina Beaumont suggested, jobs may be either segregated, integrated, or isolated.

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[8] It was noted that the potential for sexual activity may constitute a formidable concern which inhibits integration particularly of occupations where workers spend a great deal of time in close company with one another, such as police, fire fighters and construction workers. This fear of sexual activity may be based on a myth used to deter change. Conference participants were not in agreement concerning whether sexual activity is any more of a problem when job incumbents hold the same jobs than when traditional status and power differences exist (e.g., secretary-boss, nurse-doctor).

"Tipping" and Resegregation

The effort to integrate occupations assumes that occupational desegregation can be accomplished and maintained, an assumption challenged by the concepts of "tipping" and resegregation. Theoretically, after reaching a certain stage of integration, an occupation can "tip" in favor of the newly entered group, and become resegregated. This phenomenon resembles the process of racial integration of residential neighborhoods which, after a certain stage of integration is reached, some times become resegregated. If, as the tipping hypothesis suggests, occupational desegregation is at best a temporary phenomenon, our objectives concerning integration are presented with a very serious challenge.

Hartmann's and Reskin's paper underscores the potential importance of the concept of tipping, and provides a preliminary analysis of available data. Although a few examples of what appears to be tipping can be culled from the literature (e.g., secretaries, insurance adjusters and bank tellers), there is very little good evidence of the phenomenon's inevitability or pervasiveness.

The existence of a second form of resegregation whereby newly integrated occupations split into male and female sub-occupations was also suggested. We may witness, for instance, a resegregation of medicine and law as women are channelled into specific, often lower prestige specialities. Conference participants agreed that too little is currently known about both of these phenomena, and that more research is urgently needed.

Recommendations for Research and Action: Non-Traditional Occupations for Women

Our discussion of non-traditional occupations focused on several topics: the stability of occupational segregation, the permeability of male dominated occupations, the effectiveness of training for non-traditional occupations, the elements of non-traditional career choice, and barriers to the entry of women into non-traditional work. The recommendations for project funding which came out of our discussions include:

- Programs to sustain successful non-traditional training programs to help them survive the probable lack of government funding.
- Research to clarify the process of non-traditional occupation choice. Such studies should cover both adolescent and adult choices. How perceived and actual opportunity structures affect women's choices of occupations needs to be determined. Such efforts should include programs for parents to help them understand the important economic consequences of traditional versus non-traditional career choices of their daughters.
- Training of vocational education instructors and career counselors to assist them to better prepare high school women to consider non-traditional employment opportunities.
- Projects aimed at more equitable access to pre-employment education (particularly mathematics and science) and exposure to vocational skills.
- In-service training to facilitate the advancement of white collar workers in female intensive jobs into white collar administrative or managerial jobs previously dominated by males.
- Research to identify growth jobs in high technology industries and the establishment of training programs to assist women to take advantage of those opportunities.
- Research on sex integration, tipping and resegregation of occupations. The properties of occupations that have been sex integrated long enough for the composition to be considered stable are important to know. We need to know what it is about these occupations that accounts for the

maintenance of equal sex ratios. Further, is resegregation a real phenomenon? If so, how pervasive is it? Under what conditions does it occur and what factors inhibit its occurrence? Do some occupations resegregate through actually splitting into male and female sub-occupations when substantial numbers of women enter?

- Research on the attitudes of men and women in sex integrated occupations concerning protection and safety, the intimacy of the work setting, the distribution of the workload, and perceived attitudes of their "significant others" concerning the integrated work setting.

- Projects to encourage those in industry to examine their promotional practices and produce a code of practices to overcome job segregation. This code should include methods of restructuring entry level positions to provide upward mobility, the identification of structural barriers to the advancement of women, and a list of practices to better utilize the capabilities of female staff.

IV. FEMALE INTENSIVE OCCUPATIONS

The second major theme conference participants addressed involved female intensive occupations. Most women work in occupations which are predominantly female. For instance, Hartmann and Reskin reported that in 1981, 60 percent of women worked in occupations that were filled by over 70 percent women. In addition to currently employing the majority of working women, many of these female dominated occupations are projected to be those in which the largest numbers of new jobs will be created.

Much of our effort in equal employment opportunity over the last decade has been on integrating previously male dominated occupations. Only in the relatively recent past have we turned our attention as well to those occupations which remain female intensive. Karen Nussbaum and Roslyn Feldberg each made brief presentations to begin our discussion.

There were two sub-themes of female intensive occupations which were of predominate interest to conference participants. First, we discussed clerical work and the introduction of new technology. There was great concern that as new technology is incorporated into the office, attention be given to job redesign and enrichment, as well as to increasing organizational productivity. Second, we discussed pay equity between jobs traditionally performed by women and those requiring comparable levels of skill, effort, and responsibility traditionally performed by men.

Female Intensive Occupations: Focus on Clerical Work

Clerical work is one of the most visible female intensive occupations.[9] According to statistics provided by Hartmann and Reskin, clerical work is not only where most women are currently employed, but it is also where a large proportion of women are likely to be in the future.

Feldberg's and Nussbaum's presentations addressed the nature of clerical work, including the inherent problems that this occupation is experiencing as it undergoes great technological transition. They also discussed possible safeguards and remedies to these problems which researchers, activists, and foundations might pursue.

Nussbaum pointed out that the problems that exist in clerical work do not disappear with the current introduction of new technology. Rather, they are exacerbated. Already low paying jobs can be further rationalized by task into even less valued and lower paying jobs. Already limited discretion with regard to work priorities can be eliminated. Experience with relatively unsupportive supervisors can be replaced by machine monitoring -- the ultimate in a non-supportive boss.

Conference participants agreed that it is important to understand the process of these changes and to intervene where necessary in order to minimize problems and maximize potential advantages of the new technology. Such intervention is obviously best accomplished while the technology is still new, and before disadvantageous patterns are institutionalized and, therefore, more difficult to change.

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[9]The most visible clerical occupation is obviously the secretary. Yet Nussbaum provided statistics to demonstrate that secretaries represent only about 25 percent of all clerical workers.

Our discussion for research and action concerning clerical work focused on several issues. One set of issues can be grouped under the need for clerical job redesign and enrichment. These are: minimizing potential "deskilling" of clerical workers, improving clerical mobility through career ladder structures, reducing the stress of the new clerical work, coping with potential clerical unemployment, and increasing organizational productivity through the introduction of new technologies. A second set of issues involved the importance and direction of action, such as the collective organization of clerical workers to achieve change.

Job Redesign and Enrichment. Participants agreed that we currently do not have an understanding of how the new technologies will be used to redesign jobs, how the new jobs will be defined, or what levels of skill will be required to do them. Although there is much talk about the introduction of computer technology resulting in the creation of better jobs for women, Nussbaum believes that the new jobs are undesirable: "Nobody wants to sit and type nonsense information into a terminal...[but because people need jobs] more and more people are going into that line of work."

There is nothing innate in the new technology which demands job design that splits a task into ever smaller units, creating work which is monotonous and potentially alienating. Yet, there is substantial concern that much of clerical work will be simplified by the new technology so that it requires little training or skill. As such, clerical work will provide little mental stimulation or worker satisfaction. Moreover, rationalizing the work by subdividing it into its simplist component tasks fosters little understanding of how the overall work is accomplished, or how each task fits into the overall functioning of the larger organization. As a result, clerical workers often will be poorly equipped to make or participate in making any decisions

concerning either the substance or the context of a job. Participants identified "deskilling" as one of the most negative of the possible consequences of introducing new office technology.

Feldberg noted that two distinct clerical occupations have evolved through the rationalization of work in many service delivery firms. The first occupation involves coding and data entry on a computer terminal. These are entry level positions, often disproportionately held by less educated and minority women. The other occupation involves customer service positions. These are also entry level jobs, but are generally at a higher level and are filled by more educated and experienced non-minority women.

These customer service positions could have been used as promotional opportunities for coding and data entry clerical employees. However, no examples of this were cited. Rather employees in the lower entry level coder positions frequently are structurally barred from making a transition to the higher level service positions. Their training is extremely narrow, often excluding any information concerning the organization beyond their own small part of the task at hand. The customer service jobs assume employees have a basic understanding of organizational functions and policies. By creating two separate job categories, without links between them, these customer service firms have disbanded the clerical career ladder, isolating and blocking the advancement of the lowest level clerical workers.

Nussbaum's opinion concerning why many firms hire only more educated and more experienced workers for these higher level clerical positions is that it results from high levels of unemployment in other female intensive occupations such as teaching and social work. Such unemployment has resulted in a cadre of educated and experienced women looking for new employment opportunities. The entry of these women in clerical occupations may create perceived

competition for the more complex clerical jobs, competition between entry level clerks desiring advancement and these new potential employees, who bring additional human capital to their jobs, particularly education. Not only do employers often opt for the more highly educated job candidate, but they have begun to require these new credentials. This trend of increasing required educational qualifications reinforces and effectively institutionalizes existing barriers for women with high school educations who had once expected to work their way up in the organization.

It is not clear at this time whether this dual internal labor market for clericals is a general phenomenon, or whether it is limited to the service delivery firms Feldberg and Nussbaum discussed. It was suggested by some conference participants that such splitting of clerical jobs happens frequently. If this breaking down of career ladders is found more generally, it confirms fears expressed concerning the continued deskilling and alienation of clerical workers.

Beyond research and intervention concerning job design, participants strongly agreed on the need for further intervention concerning machine design. In order to satisfy more stringent European health and safety requirements, Nussbaum alleged that American companies produce higher quality and less hazardous video-display terminals (VDT's) for the European market than they produce for sale at home. She urged conference participants to begin pressuring for similar safety designs (e.g., reduced screen glare) and improved regulations (e.g., a four-hour daily limit for VDT operators) in the United States.

The combination of poor design of both job and machine results in high levels of stress for many clerical workers. Now dubbed the "occupational hazard of the computer age," such stress was previously considered an

individual's problem, a "personality defect," or a "mental or emotional problem". However, stress and its resultant physical maladies are now understood to arise out of some work involving new office technology. While much research on clerical stress has been done in European countries, very little has been done in the U.S. Nussbaum cited one study by the National Institute of Occupational Safety and Health which demonstrated that VDT operators who work on their terminals eight hours a day have the highest rate of occupational stress recorded for any occupation.

Computer-age clerical stress is not only associated with the design of the VDT, but is also associated with the very nature of work under the iron-hand of the computer. The issue is one of productivity. The machine can be used to supervise and monitor the clerical worker. It reminds him/her whenever a mistake is made and keeps track of both overall speed and error rate. This could work for the good of the firm and of the worker. However, when this monitoring is done in ever smaller units of time, the effect is extreme worker stress. As Feldberg noted, "the only thing that [firms] recognize is that 'productivity counts': how fast people can do the job; how many phone calls they can answer; how many forms they can fill out; how many key strokes they can type." An example of how this over-emphasis on machine-scored productivity can work to the detriment of both worker and firm was provided by Nussbaum. Workers in a large insurance firm reported the company's use of productivity standards which counted only keystrokes and made no allowance for accuracy rate. The operators, therefore, knowingly left errors uncorrected in order to meet production standards. This situation not only undercut real productivity, but was a demoralizing and stressful experience for the workers.

Finally, as we considered the influx of new technology, the question of clerical unemployment was addressed. Projections differ over whether the size of the clerical work force will increase or decrease. However, office technology was originally marketed as a way to increase output while decreasing costs by reducing the number of employees needed to do a job. Beaumont and Nussbaum provided illustrative statistics on the transition from electromechanical to electronic switching systems at AT&T: the transition meant that 35 people could do work previously done by 100. Reliable estimates of projected clerical displacement and unemployment, and of which jobs will be most significantly affected are not available. Yet, conference participants wondered what jobs could replace the clerical jobs which some expect to be lost due to automation during the next decades.

Because clerical work is largely done by women, the issue of clerical unemployment is sometimes considered only a women's problem. But because of the magnitude of the work force in question, and the fact that many clerical workers are self-supporting or contribute the necessary income to keep their families above the poverty line, potential clerical unemployment must be seen as a significant societal problem. Our lack of knowledge about potential clerical unemployment was noted as an important area for future work.

Direction for Change. As a starting point for improving the situation for clerical workers, there was considerable discussion of the possible benefits of standardizing jobs in the clerical occupation. For instance, data entry clerks, machine data coders, information clerks, and machine file clerks are only a few of the many titles used for people who enter data on video-display terminals. A useful aid in maximizing potential career ladders for such employees, or predicting their employment or unemployment, would be some basic standardization of such titles and job content across

organizations and industries, according to Hartmann. Such standardization would allow employing firms, personnel directors, consultants, office technology sales people, clerical employees and others to use a common language to communicate about the nature of clerical work.

While some participants questioned whether there would be general acceptance of such an intervention attempt, others were more confident. Several participants commented that most managers are so busy trying to keep up with the technology itself, that they have little time to consider how it meshes with workers and existing jobs. They may welcome the structure such guidelines would offer. As Nancy Perlman concluded, if we provide employers with a thorough analysis of the problem and outline potential solutions, employers would be receptive.

Turning the dangers of the new technology into opportunities to enrich existing jobs and build new career ladders depends in part on learning from the successes of some firms, and experimenting with alternative strategies in others. In addition, we need public education and the organization of constituents for change. Many of us agreed with Nussbaum and Feldberg, who encouraged the continued unionization of clerical workers in order to exert pressure for needed change. At the very least workers and unions must participate with management in determining how new technology will be introducted, and in monitoring its effects on the quality of working life.

Recommendations for Research and Action: Clerical Work and Changing Technology

Because we are currently in the midst of this rapidly increasing technological change, we have a unique opportunity: we can do research and plan interventions to encourage the optimal incorporation of technology into clerical work almost from the start. Our efforts should be aimed at minimizing the potential problems of deskilling, attenuated career ladders, worker alienation and stress, and clerical unemployment. Examples of such efforts which might be funded include:

- Research to examine the impact of technological change in information processing on women's employment. Analysis could include examination of the effects on the organization of work, sex segregation of occupations, mobility opportunities, job satisfaction, skill levels of workers potential job loss, and work at home.

- Research to examine job ladders within organizations and establish models for linking clerical ladders (especially those dead-ended at the near-entry level) to other kinds of work where there is more opportunity for future advancement. This may be most possible through pilot projects which attempt to place clerical employees in higher technology (and higher wage) jobs. Based on the evaluation of these pilots, the concept could be expanded to other organizations or industries.

- Research to study organizations which have successfully introduced office technology in order to build models for other organizations to follow. Such models would seek to maximize benefits to both the worker and the employing organization.

- The development of models for worker participation in introducing and monitoring technological change. These would include the monitoring of changes in the number of jobs, wages, mental stress, physical health, and safety.

- In-service training programs to assist clerical employees to develop an understanding of how their jobs fit into the larger organization. This would facilitate their ability to make informed choices within their workplaces, and would remove a possible barrier to their ability to move up in their organizations.

- Training programs to assist employers to maximize equal employment opportunity when introducing new technologies.

- Projects to educate the public concerning office automation. These would provide opportunities for the general public to learn more about the new technology and related issues of job redesign and job worth.

- Creation of an institute for defining new occupations related to the computer. This intervention would consist of defining and describing the occupations that are changing or being created because of the computer (e.g., word processing, data entry, inventory control and billing), thus standardizing the titles and identifying potential career ladders. Dissemination of this information could be done through conferences, workshops, media coverage, and professional journals.

Recommendations for Research and Action: Female Intensive Occupations in General

While the largest portion of our discussion and recommendations involved the female intensive occupation of the clerical worker, concern was also expressed about other areas of female intensive work. Recommendations for funding of efforts include:

- Research to understand more about occupations where minority women are underrepresented: what occupations they are in; how they can be included in career ladders with greater opportunity; what bridges can be built to other occupations.

- Programs to evaluate and promote career ladders and bridge job programs for non-clerical workers, i.e., sales workers and service workers. This would include documenting attenuated career ladders, developing relevant programs and information for employers, unions and female workers.

Female Intensive Occupations: Focus on Wages

Many women have a great investment in doing work traditionally done by women. While much attention has been given to desegregating occupations, Reskin reminded us that, "even if we could break down all the barriers, we couldn't expect [most] women to...abandon whatever human capital (i.e., education and experience) they have accumulated...and move into traditionally

male jobs." It is for this reason that conference participants agreed that we must not only work to integrate occupations, but also to achieve pay equity for those who remain in occupations traditionally filled by women.

The Equal Pay Act of 1963 requires that men and women be paid equally for equal work, and Title VII of the Civil Rights Act of 1964 mandates an end to discrimination in employment conditions, including compensation. Yet, we repeatedly find that wages paid to those engaged in work traditionally done by women are lower than wages paid to those in equivalent jobs traditionally done by men. In the landmark Gunther decision, the Supreme Court ruled that treating intentional sex-based wage discrimination as illegal under Title VII was not precluded by restrictions in the Equal Pay Act. The court left open the broader issue of seeking that similar jobs of equivalent skill, effort, and responsibility as male jobs must be compensated equally. This is the issue addressed in the proposed policy of equal pay for work of comparable value.

One of the bases on which the perpetuation of inequity is justified is the argument that wages are a consequence of free market forces governed predominantly by supply and demand. Daniel Leach noted that "employers are still wedded to the notion that...there is some kind of free market out there. What they say is 'given the system I have, my jobs have certain elements that they share in common with jobs elsewhere in this labor market. I want to do what everybody else does....I'm going to incorporate that into my pay system. It's not my fault if it discriminates against women.'" To be sure, the wage structure of a particular firm is imitative, at least in part, of the wage structure of other firms in the same geographic area with already established wage structures. Yet, in other areas of equal employment policy, these arguments have not proven to be legally compelling defenses against correcting for existing employment discrimination.

Steinberg noted that the legal definition of employment discrimination has shifted during the last 20 years from a concern with individual actions to a focus on correcting system oriented policies or practices which have differential impact on women and minorities. Therefore, as comparable worth case law develops, we expect that system-based justifications, such as the workings of the free market, will be more difficult to sustain as legal arguments against correcting for employment discrimination.

Winn Newman addressed another distortion surrounding comparable worth policies. Some have argued that comparable worth would require the development of a universal taxonomy of jobs and the skills required to do them. This alleged taxonomy would include all occupations, all jobs within occupations, and all employers. In fact, comparable worth policy is intended to address inequality within firms and industries by comparing jobs and wage rates only within individual employing organizations. Perpetuation and further dissemination of any other description of the policy creates great problems.

Attempts to dispel such distortions as those of the free market and a universal taxonomy of jobs are important. Steinberg discussed efforts of the Center for Women in Government, for instance, which has actively worked to counteract these ideas. She stressed the need for careful analysis of the assumptions behind opposition to pay equity and public documentation of errors.

To achieve pay equity between jobs traditionally done by women and those done by men, conference participants identified five strategies: building legal precedents, passing legislation, educating the public, organizing constituencies for change, and carrying out research. Some laws do currently exist on which to base legal suits, most notably Title VII of the Civil Rights Act, State Equal Rights Amendments, and Civil Service Laws covering public

sector employment. Favorable legal precedents are being set. Newman urged the increased use of these laws as bases for filing more pay discrimination suits. In addition, the passage of new and innovative laws may be an important strategy. An example of new state legislation is found in Minnesota, which has recently passed a law outlining how pay equity will be achieved in its public sector. This broader use of existing laws and the passage of new innovative laws would enable pay equity advocates to build additional successes by pressing for enforcement, introducing law suits, and gaining media coverage. All of these are important changes and provide resources for additional public education efforts.

Stressing the need for public education, Fredda Merzon reminded us that most people are just beginning to hear about comparable worth, and do not yet fully understand its meaning. Perlman provided an example of an effort to fill this need which the National Committee on Pay Equity is proposing. The Committee is attempting to inform the public about the issue, while remaining sensitive to the possible pitfalls of such efforts. For instance, they propose to test the words chosen to describe comparable worth in a variety of markets to be sure they are communicating effectively to their various audiences. Perlman urged that additional systematic public education is needed to mobilize interest and support for this critical issue.

Public education is important not only to promote a general understanding of the nature of the problem, but also to facilitate building constituencies among women. Donald Treiman pointed out that women tend to compare themselves and their jobs with other women. These women (and some men) may need to learn to compare their jobs with the jobs traditionally done by non-minority men to ascertain if they are being paid fairly. The cultural assumption that two wage hierarchies are appropriate -- one hierarchy for men's jobs and another

for women's jobs -- runs deep. The acceptability of this cultural assumption is another distortion which must be dispelled.

Conference participants agreed that labor unions could also play a crucial role in building constituencies around pay equity. Beaumont finds that male union members in the communications industry are most likely to support this reform when they understand how many of their jobs are being redesigned into basically clerical functions. Nussbaum stressed that women in undervalued jobs must be transformed into a political constituency. Examples of successful organizing efforts include the ongoing unionization of women in office work occupations. Other similar organizing efforts are needed to focus on women in a wider range of female intensive occupations.

The need for systematic research was highlighted as crucial to all of the preceeding activities -- legal efforts, education campaigns, and organization of constituencies. As Newman suggested, "the best education is a study. [Studies] all show discrimination. But once you have that study, you also have an effective bargaining tool or piece of legal evidence." For example, Washington State obtained the results of a study demonstrating pay inequity between jobs traditionally done by men and those traditionally done by women. The union was able to use this information to initiate a legal suit. Such studies as this are useful both to inform the public and to assist in the creation of legal and constituency pressure for change.

Recommendations for Research and Action: Equal Pay for Work of Comparable Value

The five strategies identified as necessary for achieving pay equity were litigation, legislation, education, organization, and research. Recommendations are primarily relevant to these strategies, including:

- Research to document successes in instituting comparable worth policy at various levels of government policy-making, and within industries and organizations.
- Varied experiments and pilot projects applying comparable worth policies -- in both the public and the private sectors -- which would also further inform other efforts.
- Programs to educate women in traditionally women's jobs concerning the issue of comparable worth, providing grass roots information.
- State and local conferences to educate the public on the advantages of state pay equity legislation.
- Comprehensive training programs for researchers and/or consultants who wish to provide job classification studies and technical assistance to organizations interested in pursuing internal pay equity policies.
- Development of model job evaluation and classification systems designed to eliminate sex biases in current systems such as definitions of physical effort, stress, poor working conditions.
- Research to more precisely estimate the economic cost of instituting comparable worth policy.
- Studies of race-based wage discrimination, exploring under what circumstances it is tied to sex-based wage discrimination.
- Cross-national research to clarify our understanding of occupational segregation, directed at answering such questions as: what variations exist cross-nationally in the relationship between occupational segregation and the wage gap? Do the jobs traditionally done by women and men vary from country to country? How do these phenomena vary by culture, stage of industrialization, etc?

- Research to identify specific institutional mechanisms linking occupational segregation with other forms of discrimination, especially wage discrimination. Suggestions for the direction of this research include further identification of structural barriers to women and minorities both inside and outside large work organizations.

IV. CROSS-CUTTING THEMES

Three major themes arose throughout our discussions of occupational segregation and its consequences: the need to resolve the conflict between responsibilities to work and family, the role of government enforcement and monitoring, and the need to educate and organize for change. While these themes have been touched upon in other places in this report, they are more fully discussed in this last section.

Conflict Between Work and Family

Because working women tend to do the major domestic tasks and take on the primary child-rearing roles, resolving conflicts between the demands of work and family is obviously very important for working women. Working men are only beginning to understand its importance to them.

The question of whether childbearing puts women at a disadvantage in their careers is a complex one. Available research can be found to support either position. Berryman presented U. S. Census Bureau data which demonstrated that the presence of children, especially those under age six, has a marked effect of decreasing the labor force participation of women. She also presented U. S. Department of Labor data which documented the greater probability of women working part-time during prime childbearing years than at any other time. It is not without consequence that the prime childbearing years are the same years in which men make their greatest career gains. However, Hartmann and Reskin cited other research which indicates that there is very little long-run penalty for women who drop out of the workforce to bear children.

Children are not the only family responsibility that detract from women's ability to participate fully in the labor force. Aged parents or other family members were mentioned by several participants as a population for which little care-taking assistance is available. This growing concern also should be reflected in our efforts.

Potential solutions to the problem of work/family conflict are varied. Improved nursery, pre-school, after-school day care, and daytime adult care arrangements will be essential parts of our action. Several European countries have made more progress on this front than the U.S., and their experiences might provide useful models on which to build a more comprehensive strategy.

A trend toward work in the home, "homework," was cited by Nussbaum as a potentially disturbing attempt to resolve this conflict for computer-related office workers. It is made possible by the ability to transport a terminal, and link it with the office-based computer through regular telephone lines. While it may be a viable solution to the work/family dilemma for some professionals, Nussbaum noted very few benefits for low-wage female workers whose key stroke productivity would be monitored just as in the office. She noted that "these women would now have the opportunity to do two jobs at once, child-care and a full-time paid job." While there is a growing interest in homework, conference participants agreed that our energy might be better invested in finding alternative solutions to the conflicting demands of work and family.

While this conflict may appear more pronounced for women, as the work force diversifies the conflict becomes relevant for workers of both sexes. As Berryman pointed out, the resolution of this conflict would help both women and men to "better integrate the two main sources of vitality for human beings: work and family." Until the real and perceived conflicts are

resolved, it seems unlikely that men will assume significantly more child-rearing responsibilities. Thus, women will still be forced to make choices which may reduce their career opportunities and life-time earnings relative to men.

Recommendations for Research and Action: The Work/Family Conflict

Participants made suggestions for research projects which would help us to better understand the nature of the conflict between the demands of work and family, and action projects to reduce the conflict. These include:

- Research to identify conflicts that are perceived between the occupational roles of women and their family responsibilities. How do these perceptions vary by the occupations women are currently in (e.g., clerical, professional, skilled trade, and unskilled labor occupations)? What workplace policies would have to be changed to reduce the conflict?

- Research to explore the actual connection between work pressures and family. Special attention could be paid to work pressures of various sub-groups of workers such as those in female-intensive occupations, those in higher versus lower paying occupations, single parents, and parents of pre-school children.

- Studies to investigate the effects of the presence and use of policies, such as those covering flexible work arrangements and sick child leave, on career advancement. We need to know whether such policies are used differentially by men and women, and whether those who take advantage of these options have different career experience than those who do not.

- Projects to explore the degree to which current workplace policies and practices exacerbate conflicts between work and family responsibilities. How might these be altered? Implement and monitor these recommendations.

- Projects to expand care for children or other dependents of employed people. This would include 24-hour availability for those whose opportunities may depend on working evening or night shifts.

- Programs to reduce work/family conflict, modeled on the successes of other programs. These might include alternative work schedules, job-sharing, child care, and employee/parent training. Monitor and document the consequences of such programs, including dollar costs, productivity, and quality of work life benefits.

The Role of Enforcement and Monitoring

Enforcement and monitoring of anti-discrimination laws are critical components of efforts both to desegregate occupations and to create pay equity between male and female intensive occupations.

Herman opened her discussion of the need for greater attention to government enforcement with insights from her experience with the Office of Federal Contract Compliance Programs (OFCCP) in the Department of Labor. From 1972 to 1977, only 12 federal contractors were ruled unawardable for further contracts because of discrimination. Yet, with increased enforcement efforts 12 additional debarrments were instituted in the next year alone. Herman concurred with other conference participants that the best area for stepped-up enforcement would be in growth industries. This was the case in 1978, when new apprenticeship regulations were instituted in the then-growing construction industry. With increased enforcement combined with broader outreach and recruitment programs, the number of women entering construction-related apprenticeships doubled in the first year.

The importance of effective enforcement was also stressed by Reskin. She cited a study which found that women in occupations covered by federal contract compliance rules have lower turnover rates. Additional research suggests that general managerial awareness of on-going employment discrimination litigation increases the likelihood that firms will implement equal opportunity programs. This speaks once again to the importance of

public education, in this case highlighting enforcement efforts and their impact on business.

Current federal efforts to reduce enforcement raised great concern among all participants. Both Perlman and Steinberg urged that, until the federal political climate changes, we must consider other avenues of progress. Their examples involved progressive public jurisdictions like the State of New York, where there is currently substantial anti-discrimination activity. If the federal government follows through on its intent to transfer more of the responsibility for regulatory enforcement and monitoring to the states, we must consider what possible gains in law and enforcement may be made through progressive state and local governments.

While much emphasis was placed on increased enforcement, conference participants agreed that simply increasing the use of current methods of government enforcement of existing laws and regulations would not be enough. We do not fully understand the implications of the different degrees of enforcement, the different strategies and methods which can be used, or the possible differences in optional enforcement by industry or type of organization. We need further research to aid us in that regard.

In addition to more effective enforcement of existing federal anti-discrimination laws and regulations, conference participants agreed with Leach that more innovative federal laws need to be created. These new laws must emphasize the social responsibility of organizations to end discrimination as part of their regular on-going business policy and practice. Such new laws might well result from increased workplace pressure on the part of labor unions, women, and minority group members.

Recommendations for Research and Action: The Role of Enforcement and Monitoring

To assure the effectiveness of government enforcement programs, recommendations include:

- Projects to provide information on the circumstances under which government enforcement is most effective. We need to better understand the advantages and/or disadvantages of using punishments for non-compliance; the effects of using incentives for compliance; whether the optimal conditions for implementation vary for different kinds of industries or organizations within industries; whether changes can be institutionalized in such a way that continual enforcement becomes less necessary; and the implications of federal initiatives which would shift major enforcement responsibility from the federal government to the states.

- Research to track organizational efforts to achieve specific policy and program goals concerning women and work. Attempts to assess success must take into account such factors as: the quality of enforcement, the size of the enforcement staff, and the presence or absence of support services for the program. Efforts should also include the creation of more sophisticated indicators of program success, ending sole reliance on gross numbers.

Educating and Organizing for Change

Whether we were talking about desegregating occupations or creating equity for those in female intensive occupations, participants repeatedly reminded each other of the need to educate and organize women and men concerning these issues.

The nature of successful education and organization for change may be different today than it was in times past. As Leach discussed, the style of management where managers made decisions and workers carried them out is slowly giving way to what some call "participative management," where workers and managers work together to solve mutual problems. While conference participants did not agree on the extent to which participative management has

been institutionalized, we did agree that this new model of organizational functioning does have an effect on how various constituencies would pressure for change. Some might work best from within their employing organizations, and others from outside -- either through labor unions or broader constituency groups.

Unionization consistently was discussed as being one of the primary means by which women would be able to develop a work-based political constituency. Unionization and bargaining could facilitate achieving equal pay for work of comparable value, alter the conditions of work in female intensive occupations, and integrate previously male dominated occupations.

As discussed earlier in this report, public education around the issue of comparable worth seems most critical. Although it has been dubbed the "employment discrimination issue of the 1980s," it is just beginning to be understood. We need to educate both the general public and the constituency immediately affected. As Steinberg reminded us, building such constituency support would create a kind of environment that would, in turn, influence employers, courts, government agencies, researchers, and activists. The results of this influence would then serve as a context for establishing a broader definition of wage discrimination, allowing for the inclusion of a comparable worth standard.

Our discussion of the need for public education was not limited to the issue of equal pay for work of comparable worth. In many cases we may make the mistake of focusing only on the newest issue. As Herman warned, we should not ignore the need for continued education on a variety of established equal employment related issues, such as non-traditional occupations.

Finally, an example of a successful public education campaign on which other efforts could be modeled was directed toward clerical stress. As was

discussed earlier in this report, the tremendous amount of stress in high technology clerical work used to be considered the result of individual characteristics such as "emotional problems." Working Women and similar organizations mounted information campaigns to dispel that idea. As the notion gained attention, many articles began to appear in magazines. This barrage of information disseminated facilitated the redefinition of the origin of worker stress.

Recommendations for Research and Action: Educating and Organizing for Change

Specific examples of the kind of projects which should be funded to further efforts in educating and organizing for change on these issues include:

- The collection and dissemination of examples of direct workplace pressure which have succeeded in obtaining new policies and practices to deal with integrating previously male-dominated occupations, enhancing female intensive occupations, reducing work/family conflicts, or related issues.

- National collection and dissemination of information about comparable worth activities including litigation, legislation, public education, organizing, and research. Such an information clearinghouse may be especially important when an issue is new.

- Projects to foster pressure for innovative reform, whether through administrative order, regulation, legal precedent, or legislation.

- Programs to educate women in female-dominated occupations and the general public, about the issues such as comparable worth and the effect of new office technologies, in order to create an awareness of the situation and what might be achieved.

- Programs to educate trade unions about the special concerns of women, and women about the option of organizing.

- Studies to understand the conditions under which people see themselves as members of a constituency group and whether these vary by race and/or sex.

- Projects to build expert opinion and public support for the elimination of sexual inequality in the labor force.

VI. CONCLUSION

By the close of the conference, we had come a long way toward our goal of exploring sex-based occupational segregation and strategies for eliminating it. Participants not only discussed the issues surrounding the entrance of women into non-traditional occupations and the situation of women in female intensive occupations, they also grounded their discussion with concrete recommendations for further research and action.

Underlying the policy-oriented discussion, however, was a more abstract debate among participants over whether it is more important to eliminate sex-based occupational segregation or whether we should focus our major efforts on eliminating its consequences. Berryman, for example, urged participants to focus on eliminating the consequences of occupational segregation. In her remarks, she outlined four research and action objectives: eliminating wage differentials between men and women, increasing the freedom of occupational choice for both sexes, moving toward better integration of work and family, and, perhaps most fundamentally, establishing a social agreement that labor be valued without regard to sex. In response, other participants, including Treiman and Reskin, argued that it would be impossible to eliminate the consequences of occupational segregation without eliminating segregation itself.

This question of emphasis was complicated, moreover, by another unresolved debate concerning whether the elimination of occupational segregation is even possible, given both the universality of a division of labor by sex, and the possibility of tipping and resegregation as occupations become fully integrated. We agreed that without further knowledge, the kind that

comes out of research and action programs, we cannot resolve this debate. Yet, we agreed that to dramatically improve the status of working women we will need to work simultaneously toward both eliminating occupational segregation and its negative consequences.

The fact that there is still much progress to be made on both these fronts was illustrated by the nature of our discussions on each topic. Conference participants generally agreed that occupational desegregation through women's entry into non-traditional occupations could be facilitated by outreach to families concerning career choice for young women, adequate preparation in mathematics and science, pre-training which emphasizes realistic images of work and work settings, the continuation of existing successful training programs, and the elimination of institutional barriers to women's access to these occupations. Furthermore, there was a general consensus that the labor force positions of women in female intensive occupations could be improved through restructuring and directing the use of technology to avoid deskilling and to minimize stress, organizing women in traditional occupations to press for necessary change, and eliminating the systematic undervaluation of jobs traditionally done by women. There was also considerable agreement concerning the three cross-cutting themes: the need to reduce perceived and real conflicts between the demands of work and family; the necessity of more effective enforcement and monitoring of existing laws and regulations; and the benefits of organizing and educating the public concerning all of the issues discussed at the conference.

To accomplish any of these programmatic objectives requires multiple strategies of change. For example, although government enforcement has been a major factor contributing to beneficial change for women in the labor market, it can be even more effective when combined with outreach and recruitment of

women, and direct workplace pressure on management. Greater organization of clerical workers, in combination with a public education campaign, protects against some of the potential negative consequences of working with the new technology. And, achieving the goal of comparable worth will require, as indicated above, litigation, legislation, organization, research, and public education.

Finally, three broad recommendations surfaced from discussion of the thematic issues. First, we must continue to support the successful programs that are already operating. By repeatedly funding only the newest and most innovative programs, and letting the established ones fall by the wayside, we run the risk of having to reinvent the wheel. Our agenda is too full to allow for that inefficiency. Where programs are functioning successfully, we must build on that success. Where programs may be less successful, we must assist them to succeed. Further, in assessing these programs, we need to use more creative and meaningful measures than have been traditionally used.

Second, we must develop new successful programs. It is clear that there is much to be accomplished in all of the thematic areas discussed. Although we are further along in the process of problem definition and action in some areas than others, the work is far from complete. Existing programs have led the way. We must build on past experience and create new and innovative programs to carry us even further. Foundations need to balance funding for new and innovative programs with continued funding for established and successful programs.

Third, we need to document our successes. In every area of our concern, participants were able to describe research and/or interventions that had beneficial change. Often this information had not been broadly available.

The documentation and dissemination of such cases is necessary so that new projects and programs can build upon what was learned before.

Both occupational segregation by sex and strategies to eliminate it were of major concern to all present at the conference. What may have initially appeared to be a single theme was broken down into a number of issues, each of which seem to be amenable to an array of change strategies. We are confident that, through the funding and completion of the types of research and action programs proposed, we will move forward in very concrete and specific ways toward eliminating both the negative consequences of existing occupational segregation, and, perhaps eventually, eliminating occupational segregation itself.

APPENDIX A

CONFERENCE AGENDA AND LIST OF PARTICIPANTS

APPENDIX A

OCCUPATIONAL SEGREGATION: IMPACT AND STRATEGIES FOR CHANGE

June 9, 1982

Agenda

8:15 - 9:00 Coffee and Rolls

9:00 - 9:15 WELCOME

Amy Vance
Program Officer
Ford Foundation

Nancy Perlman
Executive Director
Center for Women in Government

9:15 - 10:00 OVERVIEW OF EMPLOYMENT TRENDS

Barbara F. Reskin
Committee on Women's Employment & Related Social Issues
National Academy of Sciences/ National Research Council

Heidi Hartmann
Associate Executive Director
National Academy of Sciences/ National Research Council

10:00 - 12:30 SESSION I: NON-TRADITIONAL JOBS FOR WOMEN

Opening Remarks

Sue E. Berryman
Rand Corporation

Alexis Herman
Vice President
Green Herman Associates
Former Director
Women's Bureau, U. S. Department of Labor

12:30 - 2:00 Lunch at the Ford Foundation

2:00 - 4:15 SESSION II: FEMALE-DOMINATED OCCUPATIONS

Opening Remarks

Roslyn L. Feldberg
Assistant Professor
Department of Sociology
Boston University

Karen Nussbaum
Executive Director
9 to 5, National Association of Working Women
President, District 925
Service Employees International Union

4:15 - 5:00 WRAP-UP AND FINAL DISCUSSION

Ronnie Steinberg
Research Director
Center for Women in Government

5:00 - 6:30 Cocktail Reception

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APPENDIX B

"JOB SEGREGATION: TRENDS AND PROSPECTUS"

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JOB SEGREGATION: TRENDS AND PROSPECTS

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Job segregation by sex in the U.S. labor market is a well-documented and well-established fact. It is also a very stable phenomenon. The degree of dissimilarity in the occupational distributions of men and women workers has remained virtually the same since 1900. This stability is surprising in light of the enormous changes that have taken place in the structure of the economy, the turnover in occupations as obsolete occupations disappear and new occupations develop, the narrowing of educational differentials between men and women, and most recently the increasing similarity of the labor force participation patterns of men and women. The vastly increased labor force participation of women since World War II, particularly of young married women and mothers of young children, coupled with a tendency for the labor force participation rates of males to fall, is bringing about a convergence of male and female labor force participation patterns.

Both job segregation by sex and male and female labor force participation patterns have implications for the male-female earnings differential. Women who work full-time, year round continue to earn approximately 60 percent of the earnings of full-time year-round male workers; indeed, in recent years, the ratio of women's to men's earnings has been falling, despite the increased similarity in the work patterns of men and women. Let us look at some of these recent trends in more detail, focusing particularly on explanations for job segregation and the earnings differential and the implications of various labor market changes for the extent of job segregation by sex in the future.[1]

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*The views expressed herein are those of the authors and not of the National Academy of Sciences.

Labor Force Participation Patterns

According to one school of explanation, the disparity in the patterns of labor force participation of men and women is a major source of job segregation by sex in the labor market and the male-female earnings gap. Mincer and Polachek (1974, 1978) and Polachek (1976, 1979, 1981) have argued that because women anticipate periods of withdrawal from the labor market for childrearing, they will invest less in human capital (acquiring education, training and so on) than men and will tend to choose occupations in which the wage penalty for skills depreciation during time out of the labor market is low--that is, occupations whose lifetime earnings growth is relatively slow. Indeed, it has often been observed that women's age-income profiles are relatively flat compared to men's. Age-income profiles derived from cross-sectional data were quite flat in 1955 and 1965 for women, while men's profiles showed increases until about age 45 and declined thereafter. Only in 1975 did incomes rise nearly as steeply for young women as for young men, and even then, women's incomes peaked at an earlier age than men's (Lloyd and Niemi, 1979:172).

Various challenges to the human capital explanation for women's lower earnings and sex-segregated jobs have been offered (Corcoran, 1979; Corcoran et al., 1982; England, 1982) and reviewed by Treiman and Hartmann (1981) and by Blau (1982). Using data from the Panel Study on Income Dynamics, Corcoran and her colleagues have found that little loss to women's earnings from labor force withdrawal occurs and that the small loss is rather rapidly made up on reentry. England, using data from the National Longitudinal study, found no correlation between penalties to skill depreciation and the proportion female of an occupation and concluded that there is thus no basis for believing that women choose occupations to minimize income loss, as the human capital model suggests.

Women do average fewer years of labor market experience and shorter job tenure than men (Corcoran et al., 1982). Although the labor force behavior of young women is now changing, women have interrupted their work time for childrearing and other family responsibilities. Employers may, as Blau (1982) and others have pointed out, structure occupations for women to accommodate this perceived pattern; they may also deny women on-the-job training that could lead to jobs with wages that increase with job tenure. Duncan and Hoffman's findings (1978) that women with the same years of labor force experience as men tend to receive less on-the-job training suggests that employers do have different promotion practices for women and men. If employers have tended to penalize women (perhaps because of their own perceptions about the labor market behavior of women with families), then women's lower return to labor market experience can hardly be said to be the result of their own choices.

In any case, the labor force participation patterns of women and men are becoming more similar. The impact of these changes may in future years increase women's relative earnings somewhat, as women's expectations and employer's attitudes and practices change. The convergence in men's and women's patterns is occurring both because men's

participation rates are falling in most age groups and women's labor force participation rates are rising in nearly all age groups. Table 1 provides information about women's participation for detailed age groups over time. Most striking is the very recent rapid increase in rates among women in the prime childbearing years, ages 20-34. The labor force participation rate of married women with children under 6 has risen dramatically, from 11.9 percent in 1950 to 43.2 percent in 1979; and for those with children 6 to 17 years, from 28.3 percent to 59.1 percent (U.S. Department of Labor, Bureau of Labor Statistics, 1980, Table 26). Reading down the stepped lines in Table 1 reveals increased labor force participation for each successive birth cohort at every stage of the life cycle.

These statistics on the increases in women's labor force participation are dominated by the experience of white women, since black women have historically had consistently high labor force participation rates. Black women's rate of 46 percent in 1955 was not attained by white women until 1976. White women have been catching up to black women since World War II, although a small difference remains. The labor force participation rates of Hispanic women lag behind those of white and black non-Hispanics, but have increased rapidly throughout the 1970's, from 40.9 percent in 1973 to 49.9 percent in 1981. Table 2 shows some of these differences.

One result of these changes in labor force participation patterns of women is to increase the average experience of women in the labor force. Actually, there are two counteracting tendencies. On the one hand, many new entrants to the labor market could serve to reduce the average experience of women in the labor market. (Some have suggested this explains the widening wage gap between men and women; Economic Report of the President, 1974). On the other hand, higher labor force participation rates also reflect the fact that women with experience are reentering or never leaving, thus increasing women's average experience. In fact, the latter effect has predominated, according to Blau (1982) and Lloyd and Niemi (1979), narrowing the experience gap between women and men. Between 1957 and 1977, an index of annual labor force turnover has fallen about twice as much for women as men (10 and 5 percentage points, respectively; Lloyd and Niemi, 1979:71). There has also been a strong decline in exit rates for women since 1968 (Lloyd and Niemi, 1979:72). Longitudinal data such as the National Longitudinal Surveys, the Panel Study of Income Dynamics, and the Continuous Work History Sample also show that turnover has not increased and that women's labor force participation is increasingly continuous (Lloyd and Niemi, 1979:73-79; Blau, 1982). Furthermore, Lloyd and Niemi marshall data that show women's increased labor force participation rates have not been offset by an increase in part-time or part-year work. Between 1968 and 1978 the average hours per week of women workers has fluctuated around 34 or 35 and the proportion of women who work part-time has been about 24 percent (Lloyd and Niemi, 1979:57). Indeed, both part-time and full-time women workers have increased their weeks worked per year by over two weeks between 1959 and 1977 (Lloyd and Niemi, 1979:60).

Many of these changes are reflected in the convergence in the sexes' work-life expectancies. In 1970, 20-year old males could expect to work

37.3 years compared to 21.3 for same aged women. By 1977, these figures were 36.8 and 26.0, respectively. (These estimates are drawn from a new dynamic modelling technique that takes into account age-specific probabilities of movement into and out of the labor force; Smith, 1982:16-17.)

Wage Differentials

Despite the convergence of men's and women's labor force experience and continuity of participation, the earnings gap between men and women has increased since the 1950's. Table 3 shows sex and race differentials in earnings for full-time, year round workers over time. It is important to note that while the ratio of earnings for white women to those of white men has declined, the ratio of black women's earnings to those of white men has increased substantially. Indeed, black women are now near earnings parity with white women; in some age groups and regions, black women earn more than white women. This should not be surprising, however, since as we have seen black women have shown greater labor force attachment than white women. The improvement for black women is generally attributable to increased access to clerical jobs and their decreasing concentration in service occupations. The decline in the earnings ratio for white women is less explicable but may be partially attributed to the growth of relatively low paid predominantly female occupations.

The low earnings ratio between women and men holds true at all educational levels, as Table 4 illustrates. Black and white women with four years of college earned less in 1979 than white men with no more than eight years of elementary school. Several new studies show, however, that in recent years the earnings of young women just entering the labor market are closest to those of young men. While this is a hopeful sign, it is also true that the longer the sexes are in the labor market, the wider the earnings gap. Four years out of Stanford Business School, women who earned, on average, starting salaries that were equal to those of their male counterparts earned only 80 percent of their male colleagues' salaries (Strober, 1982a). And several studies have shown that young women do not get the same returns to experience, in terms of wages, that young men earn (Kahn, 1980; Sandell and Shapiro, 1980).

Several reviews of the numerous economic and sociological studies that seek to explain the sources of the large wage differential between male and female workers using national data sets and regression analysis are available (Treiman and Hartmann, 1981; Blau, 1982; also, see Kohen, 1975). Their findings can be summarized by saying that, in general, less than half of the gross earnings differential of approximately 40 percent can be explained by factors thought to contribute to productivity differences between individuals or jobs (such as years of schooling, years of experience, skill required by the job, etc.). The large remaining gap suggests that discrimination (and its manifestations, including occupational segregation) plays a substantial role in depressing women's wages. Those studies that have direct measures of women's experience and job tenure rather than estimates based on age and average labor force participation are most successful at explaining the gap, since women have on average less experience and lower job tenure than men. Yet, such a study by Corcoran and Duncan (1979), based on data from the Michigan Panel on

Income Dynamics study, still leaves 56 percent of the gap unexplained. It should be noted that their results reveal that job tenure (years with present employer) is much more important in explaining earnings differences than is general labor market experience (time in the labor market over the lifetime).

Of interest for the connection between job segregation and the male-female earnings gap is the finding that including occupational categories as explanatory variables further reduces the gap, depending on the degree of detail of the classification used. These studies suggest that job segregation is an important source of the earnings differential between men and women. This conclusion is consistent with the high proportion of the earnings gap that is explained in studies that focus on narrowly defined occupations (Johnson and Stafford, 1974) and the low portions explained in studies which do not control for occupation (Corcoran and Duncan, 1979; Oaxaca, 1973). The finding that job characteristics generally contribute little to explaining wage differences further suggests that it is the existence of job segregation rather than differences in the nature or requirements of the jobs done by men and women that contribute to the gap.

The connection between occupational earnings levels and percent female of each occupation has been known for some time. Sommers (1974) examined 1970 Census data and noted a clear relationship between the proportion female of an occupation and its annual median earnings for both men and women. The relationship is specified more precisely in the report on comparable worth by the National Research Council's Committee on Occupational Classification and Analysis (Treiman and Hartmann, 1981:28-31). For 499 classified occupations in the 1970 expanded classification, each additional percent female in an occupation was associated with a $42 loss in median annual earnings. Overall, workers in predominantly female occupations earned about $4,000 less in 1970 than those doing "men's work." The relationship between percent female and earnings holds even when various occupational characteristics as measured by the Dictionary of Occupational Titles (U.S. Department of Labor, 1977) were controlled; the net decline in median earnings associated with each additional percent female dropped to $27, suggesting that differences in occupational characteristics accounted for about 35 percent of the gross association with percent female.

Unfortuately, precise estimates of the impact of segregation on wages are difficult to devise. The gross earnings gap between men and women can be apportioned for any set of occupations for which we have male-female earnings ratios, either to within-occupational earnings differentials or to inter-occupational differences (where the latter is considered the portion due to occupational segregation). Clearly, the impact of occupational segregation will be seen to be larger the more detailed is the occupational classification; using the most detailed available Census classification, 35 to 41 percent of the sex differential can be attributed to job segregation.[2] Such a measure is a minimum estimate, however, since even the detailed occupational classification does not capture the extent of job segregation in the economy. For example, in a study of eight integrated office, professional, and

technical occupations Blau (1977) found that more of the male-female wage differential within each occupation could be accounted for by wage differentials between firms than by wage differences within firms. That is, men and women were segregated between low and high wage firms; the high wage firms hired fewer women across all the occupations studied. Job segregation by sex--in this case across firms--clearly contributed to the sex based wage differential within the integrated occupations.[3]

Unfortunately, we have few studies that can link earnings data with job segregation at the firm level. Those studies we do have of pay and employment practices within firms (Malkiel and Malkiel, 1973; Talbert and Bose, 1977; Osterman, 1978; and Halaby, 1979; all reviewed in Treiman and Hartmann, 1981) confirm that various kinds of tracking into segregated opportunity structures within firms affect women's earnings, often by differences in initial assignment and in promotions for equally qualified individuals.

Several recent studies motivated by comparable worth claims attempt to arrive at estimates of the extent to which the wage rates of women's jobs are depressed relative to men's jobs that have equal requirements, as determined by job evaluation systems. Newman (1976) has argued that women's and men's jobs at many electrical manufacturing plants still carry the wage differentials for work of equal value (different jobs with equal job-worth scores according to job evaluation plans used to rate jobs) that were accepted practices in the 1940's and 50's. The International Union of Electrical, Radio, and Machine Workers, for which Newman was general counsel, has won some wage settlements that raise the rates of pay of women's jobs. New job evaluation studies have been performed in many places, particularly state and local civil service systems, to ascertain whether women's jobs are underpaid relative to men's at equal skill levels. One such study of Washington state found for a sample of predominantly men's and women's jobs that women's jobs tended to be paid about 80 percent of what men's jobs with equal job worth scores were paid (Remick, 1980).

All of these types of studies convincingly demonstrate the relationship between job segregation and lower wages for women, but an overall estimate of the effect of job segregation throughout the economy on women's wages is unattainable given the paucity of data at the job and firm level. Let us look now at the extent of job segregation; the experience of women in female dominated, male dominated, and integrated occupations; and the prospects for change.

The Extent of Occupational Segregation by Sex

Occupational segregation is often measured by the index of segregation (computationally identical to the index of dissimilarity, Duncan and Duncan, 1955). The index represents the proportion of workers of either sex who would have to move to an occupation dominated by members of the other sex in order for the occupational distributions of the sexes to be identical. The recent small changes in this index, which has fluctuated between 65 and 69 for three-digit occupational classifications over this century (Gross, 1968), are, as Blau and Hendricks (1979) have

pointed out, the net result of two counteracting trends in the labor market: occupational growth and changes in the gender integration of occupations. Working with a selected set of detailed occupations that could be made comparable across the 1950, 1960, and 1970 Censuses, Blau and Hendricks found that the increase in segregation observed between 1950 and 1960 was due to the increase in the size of several occupations that were either heavily male or female, particularly the rapid growth of the heavily female clerical occupations, while the decline observed between 1960 and 1970 was due to greater integration of occupations, particularly the movement of men into such traditionally female occupations as elementary school teacher, librarian, social worker. Blau and Hendricks predicted that a significant decline in the index (to .601) would occur by 1985. Indeed Beller (1982), using CPS data, found that the index of segregation declined further between 1971 and 1977 using one series of data and between 1972 and 1981 using another.[4] The decline occurred both because women entered occupations dominated by men (particularly managerial and professional jobs) in greater numbers and because the employment distribution shifted somewhat, with integrated occupations growing. Beller does not project further significant declines in the 1980's, primarily because occupational growth is expected to occur most in heavily female dominated occupations and in those male dominated occupations which women are not likely to enter in significant numbers (craft and operative jobs).

A recent examination of job segregation by Malveaux (1982) reveals the uneven degree of occupational segregation among women of different racial, ethnic and age groups. Using 1981 data from the Bureau of Labor Statistics at the two-digit occupational level, she shows that at all age groups black women are more likely to be in typically female occupations (those over 47 percent female) than are white women. Both black and white women are more likely to work in typically female occupations when they are under 25; half of the 16- and 17-year-olds work in just two two-digit occupational categories: food service workers and miscellaneous clerical jobs (52.1 percent of blacks and 50 percent of whites). Black --and to a lesser degree white--women over 45 are also more heavily concentrated in typically female occupations (primarily service occupations) than women between 25 and 45. Black women are more likely to be in blue collar and service work than white women.

In 1981 a smaller proportion of Hispanic women worked in typically female jobs than either black or white women, primarily because Hispanic women, who are less likely to hold white-collar jobs, are much more likely to be in blue-collar jobs as factory operatives than either white or black women. Both black and white women reduced their representation in typically female jobs between 1968 and 1981 (data on Hispanic women are not available before 1977), but white women reduced their representation in both blue- and white-collar jobs that were typically female whereas black women increased their representation in typically female white-collar jobs and decreased it in typically blue-collar jobs. A further examination of occupation data at the three-digit level showed, however, that although women moved during this period into two-digit level categories that were "integrated" or predominantly male, they located within them in enclaves that were or became heavily female.

Malveaux also examined occupations that are intensively black female, those in which black women's representation is at least 150 percent (i.e., at least 8.1 percent) of their representation in the labor force as a whole (5.4 percent in 1981). Not surprisingly, the jobs that white and black women dominate differ. For example, typical black female occupations at the three-digit level in the clerical category include postal clerk, cashier, telephone operator and duplicating machine operator, but black women are not overrepresented in certain typically (white) female clerical occupations, such as receptionist, bank teller, secretary As Malveaux points out, the clerical jobs that black women dominate have a "behind the scenes" character to them. In the operatives category, black women are heavily overrepresented in textiles but white women are not.

The extent of occupational segregation by sex in the labor market is underestimated even when the three-digit occupational classification is used. Detailed occupational categories sometimes combine occupations of widely differing sex ratios. It seems likely, for example, that the category "crossing guards and bridge tenders," which is reasonably sex integrated, in fact consists of mostly male bridge tenders and mostly female crossing guards. The Dictionary of Occupational Titles lists over 12,000 unique job titles and over 16,000 alternates (U.S. Department of Labor, 1977). Moreover, workers of any particular occupational category can be arranged among firms or industries so that they work in more segregated settings than is indicated by the sex composition of the category taken as a whole. For example, in 1970, assemblers were 49.4 percent female (fairly integrated), but in motor vehicle manufacture, only 17.1 percent of assemblers were women, whereas in electrical machinery manufacture, 74.2 percent of the assemblers were women (U.S. Bureau of the Census, 1972: Table 8). Or elevator operators may be all female in some firms, and all male in others. Blau found in her 1977 study of eight integrated office and professional and technical occupations that workers were distributed across firms in a much more segregated manner than would have occurred randomly (Blau, 1977: Chapter 4). Establishment level data examined by Bielby and Baron (1982) reveal that, of 393 sampled California establishments, 201 (or 51 percent) were completely sex segregated with respect to job classification: no men and women shared the same job title. (An additional 30 were one-sex establishments.) Only 16 of the remaining 162 establishments had values below .60; their mean index of segregation was 84.1. Clearly the more closely one looks at the labor market, the more segregation one observes.

Female Dominated Occupations

Most women work in occupations that are predominantly female. In 1981, 60 percent of women worked in occupations that were more than 70 percent female (Malveaux, 1982:Table 1), many of which have been female dominated since 1900. Moreover, many of the female dominated occupations are precisely those that are expected to grow substantially in the next decade. Of those 20 occupations that are expected to experience the largest growth in numbers through 1990, all but 6 are more than 66 percent female (Carey 1981). Men--particularly minority men (Malveaux, 1982)--have entered some traditionally female dominated jobs (e.g.,

teachers, telephone operators, and cooks; see Table 5), but other occupations have become female dominated over the last 40 years (e.g., retail sales clerk, bank teller) and some appear to be on their way to becoming female sex-typed (e.g., editors and reporters, weavers). These are shown in Table 6.

These data suggest that the importance of female dominated occupations in women's work lives will grow: the already heavily female occupations are growing, men are entering only a few of them in very small numbers, and increasing numbers of occupations appear to be on their way to becoming female sex-typed. Furthermore, although the degree of sex segregation in the labor market apparently declined in the 1970's, further changes are not anticipated. As Bergmann and Adelman (1973) have pointed out, a stable index of segregation coupled with a growing labor force means that increasing numbers of women work in the low paid female dominated jobs. Consequently, it is a strong possibility that deterioration in women's earnings and opportunities will occur unless countermeasures are taken.

One possibility that might alter this scenario somewhat deserves mention. The recent advances in microprocessors have altered and will continue to alter information processing and communications in significant ways. Work and work places, career ladders, and job opportunities are all being restructured. Some kinds of jobs may eventually disappear or contract sharply (e.g., file clerk). And while new jobs are being created (e.g., data processing machine repairer), preliminary evidence suggests that women are not getting them (Werneke, 1982). Rapid introduction of the new technology could slow the growth of clerical occupations (some analysts have projected vast amounts of job loss in the next 10 years). If women do not work in clerical jobs, they may enter other female dominated jobs (such as service occupations), integrate male dominated jobs, become unemployed, or reduce their labor force participation. Most of the possibilities do not suggest improvement in women's situation. Research is called for to inform our understanding of what is likely to happen and provide a useful guide to introducing and adopting the new technologies in ways that are likely to enhance women's opportunities.

Policy Options. Two broad not unrelated strategies to improve women's situation, given the likelihood of the increased importance of female dominated jobs, suggest themselves: comparable worth or pay equity strategies and unionization. An increasing number of women workers, particularly librarians, nurses, and clerical workers, claim that their jobs are underpaid relative to men's jobs with comparable skill and other requirements. Using job evaluation or other techniques, they attempt to show that their jobs are underrated or misclassified, given their requirements. For example, nurses working for the City of Denver found that nursing service directors were grouped in a classification that was 86 percent female and included beginning nurses and dental hygienists, rather than with other supervisory positons held mainly by men, which they believed were comparable (e.g., hospital administration officers and directors of environmental health). The nurses were not successful in pursuing their case through the courts (see

Perlman and Ennis, 1980, and Treiman and Hartmann, 1981, for several other examples). In the summer of 1981, women workers successfully won pay increases from the City of San Jose, after a job evaluation study showed that women's jobs were underpaid relative to men's of equivalent requirements and their local AFSCME-affiliated union struck for a comparability wage increase. Clerical workers are increasingly unionizing, and organizations of clerical workers and many other associations are pursuing pay equity issues. With women increasing as a proportion of the labor force, many established unions recognize the necessity to organize women workers. Women's union membership has increased from 18.3 percent of total union membership in 1960 to 23.5 percent in 1978 (U.S. Department of Labor, Bureau of Labor Statistics, 1980:Table 9).

The collective nature of these strategies is appealing. Pay equity strategies potentially provide many more women with benefits than do the more traditional equal employment opportunity remedies of equal access to men's jobs and equal pay with men in the same jobs. As the National Research Council report noted, the equal opportunity strategy cannot satisfy women with large investments in traditionally female jobs; only a few such women can or may want to change jobs.

Many women are, of course, continuing to enter the female dominated occupations. Given their socialization or perceptions of the opportunity structure, many people's occupational preferences are sex typed (Brinton, 1982:13) But Marini and Brinton (1982) also report that young people's occupational aspirations are less sex-typed than their expectations. Women's nontraditional aspirations are sometimes squelched. For example, between 33 and 45 percent of female CETA participants with nontraditional employment aspirations were placed in traditionally female jobs (Wolf, 1981:98). While sex-typed aspirations are quite stable through adolescence (Marini and Brinton, 1982), after their middle twenties women may be increasingly receptive to better paying, male dominated occupations. Women well into adulthood face less pressure to prove their femininity and are more likely to experience real economic need to maximize their incomes, especially single parents.

Strong evidence for the impact of perceived opportunity on women's nontraditional occupational choices lies in the dramatic increases in the proportions of women entering the professions opened to them by federal equal opportunity laws and affirmative action programs. A rapid increase in the pool of women anxious to become miners (Clauss, 1982:20; Coal Employment Project, 1981) indicates that women will also enter nonprofessional, and indeed--physically arduous--but highly paid jobs, when they believe them to be accessible.

Clearly, both strategies of equal access and pay equity for women's jobs must play their roles in overcoming women's disadvantaged place in the labor market.

Male Dominated and Integrated Occupations

Given their large increase in the labor force, surprisingly few women work in gender-integrated occupations (and fewer still do the same job as men in gender-integrated work settings; Bielby and Baron, 1982). Some observers have suggested that occupational integration is a temporary phenomenon: after reaching some "tipping point," integrated occupations become resegregated for members of the newly entering gender. Apart from Strober's (1982b; Tyack and Strober, 1981) historical analysis of the teaching profession, we found no systematic research on tipping or the resegregation of integrated occupations, but statistical evidence exists. Two occupations which have shifted from predominantly male to female are insurance adjusters and window dressers, and several examples of occupations that may become female dominated are shown in Table 6. Some systematic research is available regarding a related phenomenon: the tendency for newly integrated occupations to be split or stratified into male and female sub-occupations (Carter and Carter, 1981). For example, the low paying occupation "meter maid" is a sex segregated off-shoot from the occupation of police officer. Further research is required on the processes that operate when women enter male occupations; particular attention needs to be paid to changes in wage rates and opportunity structures. With this caveat in mind, let us look at some examples of apparently integrating occupations.

Table 7 lists selected occupations that have become less sex segregated. Undoubtedly, many different factors led to the integration of these particular occupations; our present suggestions are speculative. The impact of affirmative action in education (lawyers, doctors, engineers), litigation (telephone installers and repairpersons), and the federal contract compliance program (mines and banking) is evident. Remick (1982) has pointed out that some male dominated occupations that women have permeated are performed by individuals who do not work much with others in the same occupational role (bus driver, real estate agent/broker, bartender, dispatcher, mail carrier, messenger, office machine repair person). Recently integrating occupations are often unionized (postal employee, bus driver, teacher, printing press operator, precision machine operator). Some experienced rapid growth (computer programmer, real estate agent, accountant, bill collector). New technology may have been crucial in some occupations' receptivity to women (typesetter/compositor, computer programmer). But other occupations recently open to women are stagnant (shoe repairperson), declining in economic status (college and university professors; see Carter and Carter, 1981) or becoming technologically obsolete (printers; telephone installers--see Hacker, 1978).

Attempts to explain women's underrepresentation in male-dominated occupations often invoke either women's choices or employers' preferences for male workers. However, as noted above, women's preferences are influenced by perceived opportunities, which in turn depend in part on the behavior of various "gatekeepers," including employers. Discrimination in access to apprenticeship (Briggs, 1980; Kane and Miller, 1980) and federal job training programs (Wolf, 1981; Waite and Berryman, 1982) illustrates how gatekeepers can limit women's opportunities to compete for male-dominated jobs.

Barriers within the workplace also restrict women's participation in traditionally male occupations. Weight-lifting restrictions, illegal under Title VII, justified hiring decisions in several California firms during the 1970's (Bielby and Baron, 1982). These would not survive legal challenge, but not all such policies can be litigated. Moreover, the courts have permitted some discrimination on the basis of sex (see Clauss, 1982, for several examples). They have yet to rule on policies excluding women in the childbearing years from an estimated 100,000 jobs that might expose them to toxic substances (Clauss, 1982:18). Veterans' preference laws and policies reduce women's access to certain jobs and job training programs (Wolf, 1981:109). Despite its segregative effect, the Supreme Court has allowed veterans preference to stand (Personnel Administrator of Massachusetts et al. v. Feeney, 99 Supreme Court 2282 [1979]). Other personnel procedures, perhaps established for non-discriminatory reasons, have segregative effects. Seniority systems and bidding practices negotiated in collective bargaining agreements may prevent women from applying for predominantly male, skilled blue-collar jobs (Kelley, 1981; Bielby and Baron, 1982), and the promotion systems of some organizations have been shown to restrict the number of women eligible for advancement (Haignere et al., 1981; Ratner, 1981; see Roos and Reskin, 1982, for a review).

Policies to enhance integration. Studies of the banking, mining, and construction industries, targeted by the Office for Federal Contract Compliance in 1977 for special enforcement efforts, illustrate the conditions under which these types of barriers can be surmounted. Because traditional recruitment methods may fail to bring women to the attention of well-intentioned employers, special outreach programs are necessary. They are also effective (Walshok, 1981). Setting goals is not sufficient to open male dominated occupations to women, but studies of the mining (cited in Clauss, 1982:20) and the construction industries (U.S. Department of Labor, Employment Standards Administration, 1981; Westley, 1982) indicate that they are necessary. When they are enforced, impressive gains follow.

A variety of organizational practices can enhance women's success in nontraditional jobs. Pre-employment programs that prepare women for what to expect in occupations previously closed to them reduce turnover (Meyer and Lee, 1978; Schaeffer and Lynton, 1979). Particularly important is training--both prior to beginning a job and on the job (Meyer and Lee, 1978:18; U.S. Department of Labor, Employment Standards Administration, 1981; Westley, 1982). Exposing women to the tools and techniques (and providing "hands on" experience, Walshok, 1981) with which men are already familiar puts women on a more equal footing with male co-workers. This is especially important in jobs learned primarily through informal on-the-job training by co-workers, who might otherwise resist helping women whom they believe are unqualitied.

Male co-workers' attitudes create a major barrier to women's integration into predominantly male occupations, especially in settings in which one's ability to do the job depends on the co-workers' cooperation. The deterrent effect of co-worker resistance is consistent with women's success in integrating some solitary jobs. Remick (1982) has

suggested that women face particular resistance in occupations such as fire fighter, in which workers spend a lot of time together as a social group. Not surprisingly, Walshok (1981) found that women who are indifferent to social approval are more likely to succeed in male dominated blue-collar jobs. Male resistance often takes the form of sexual harassment (Enarson, 1980; Westley 1982). Recent Equal Employment Opportunity Commission guidelines that extend Title VII protection to include sexual harassment recognize its deleterious effects and provide an incentive for employers to take sexual harassment seriously. A Conference Board survey (Shaeffer and Lynton, 1979:21) demonstrated the importance of top management commitment in improving women's employment opportunities. Managerial awareness of federal anti-discrimination laws and of litigation against violators, the implementation of an equal employment policy that included goals and timetables, and a staff responsible for carrying out the policy were associated with success in moving women into formerly male dominated jobs.

Outside the workplace, the lack of adequate child care reduces women's job options by limiting their entry into the labor force (Presser and Baldwin, 1980), their participation in federally supported education and training programs (Wolf, 1981:87), and the amount of time they can devote to their jobs (thus fostering women's retention in part-time jobs). It restricts their ability to work certain shifts, to take advantage of promotions or training needed for advancement, and to accept jobs that require travel. Women with the lowest average incomes (young mothers 18 to 24, unmarried mothers, blacks, non-high school graduates, and women with family incomes below $5000) were most likely to report child care was unavailable or inadequate (Presser and Baldwin, 1980). Consequently, assuring adequate childcare is an important policy priority.

Future Prospects

The degree of sex segregation in the future will depend to a considerable extent on both occupational opportunities in female dominated occupations and enforcement efforts to open male dominated jobs to women. Labor force analysts predict continued growth of several predominantly female occupations (Carey, 1981). Barring substantial need on the part of qualified men (e.g., high male unemployment) or special efforts to attract men (perhaps through higher wages), women will continue to dominate these occupations, thereby ensuring the continuation of substantial segregation. As we have noted, however, women's situation in the female dominated jobs can likely be improved via pay equity and unionization strategies. Many studies ae being conducted of pay inequities and many organizations are mobilizing women workers to demand pay equity. The introduction of new technology poses a formidable problem in the clerical occupations, however, and will need to be closely watched in order to enhance women's opportunities. Pay levels in these jobs can be affected, too, by the opening of additional opportunities to women elsewhere.

Women have demonstrated their responsiveness to perceived improvements in opportunities in male dominated occupations. Change has been particularly striking in the professions. Between 1970 and 1980, the

proportion of law degrees awarded to women has skyrocketed from 8 to over 40 percent. Comparable figures for medical degrees are 10 and 33 percent; for masters of business administration, 3 to 21 percent (U.S. Department of Education, 1971; 1981). Data for 1980 show substantial gains in the numbers of women earning engineering degrees. Over 10 percent of bachelors degrees are awarded to women compared to less than one percent a decade ago, and, in 1980, 1250 women earned doctorate degress (Engineering Manpower Commission, 1981)[5]. The majors of male and female college graduates are increasingly similar (Beller, 1982). Between 1970 and 1980, the percentages of women whose bachelors' degrees were in education halved (from 36 to 18 percent), while the business and health professions grew correspondingly. Change has been less apparent in the nonprofessional occupations. But some examples of integration such as coal mining are striking. Changes in the occupations seem to require special recruitment and job training efforts to attract large numbers of women.

Changes will continue to occur if enforcement of federal antidiscrimination laws and affirmative action programs is maintained. Although demonstrating the effect of enforcement presents formidable problems (Blau, 1982), federal contract compliance efforts have increased women's job tenure, apparently by improving some aspects of their job (Osterman, 1981). Regarding the effect of Title VII, Beller (1979, forthcoming, cited in Blau, 1982) estimated that its enforcement has increased the probability of women being employed in a male dominated occupation by about six percentage points, all else being equal. Moreover, case studies (O'Farrell and Harlan, 1982) and surveys demonstrate that enforcement (either through litigation or consent decrees) or the fear of enforcement has prompted employers to identify, encourage, and hire female candidates (see Meyer and Lee, 1978; Shaeffer and Lynton, 1979; and O'Farrell and Harlan, 1982 for analyses of effective strategies.)

Federal and state enforcement efforts could also be directed towards pay equity issues. The Supreme Court's decision in the Gunther case (County of Washington et al. v. Gunther et al. [80-429]) makes it fairly clear that pay comparability across different occupations can be litigated under Title VII of the 1964 Civil Rights Act. That many state legislatures have mandated comparability studies of their own civil service systems suggests strong interest at the state level. Enforcement and other government initiatives can clearly have an impact in female dominated occupations as well as continue to encourage integration.

Notes

[1]Much of the material cited here is recent research that was prepared for presentation to the National Research Council Committee on Women's Employment and Related Social Issues at a workshop on job segregation held May 24-25, 1982 in Washington, D. C. It is anticipated that many of the papers presented will be published in a collected volume. In addition, the Committee is preparing a report on job segregation that is expected to be available early in 1983. Our citations are to preliminary drafts of papers that will be revised prior to publication; consequently our representations of the research should be regarded as tentative. The National Research Council is the operating arm of the National Academy of Sciences.

[2]An exercise to illustrate the range that could be attributed to job segregation was undertaken by the National Research Council committee (Treiman and Hartmann, 1981:34-35). The portion attributed to job segregation was 3 to 11 percent using the Census Major Group classification, 11 to 19 percent for a 222 occupation classification developed by Treiman (Treiman, 1973) and 35 to 41 percent for the detailed Census classification. The range of estimates at each level of occupational detail comes from two different ways of decomposing the gross earnings differential. The lower estimate occurs when it is assumed that men would earn the same income as women in each occupation; the higher one when it is assumed that women would have the same wages as men in each occupation. (See notes to Table 9 and surrounding text in Treiman and Hartmann, 1981.)

[3]Hence, Measures of the impact of job segregation that rely on comparing women in women's occupations to women in men's occupations are also likely to be underestimated since they implicitly assume that earnings differences between women and men <u>within</u> occupations are not affected by job segregation. A recent study by Rytina (1981) using data from the 1976 Survey of Income and Education finds that wage differentials between men and women are largest in those occupations that are most dominated by males, a result also noted for 1970 data in Treiman and Hartmann (1981:29). In other words, when women do enter "men's occupations," they are subject to greater discrimination, a fact probably not unrelated to their even lower alternative wages in their "own" occupations. Nevertheless, on average, it still pays for women to work in "men's occupations."

[4]Beller points out that her calculations based on the CPS are not comparable with the earlier calculations based on the Census Data. The level of her indices is higher, e.g., .683 in 1972 compared to .657 in 1970, computed by Blau and Hendricks (1979). Consequently, her finding of a drop to .617 in 1981 may well be reflected in an even lower index based on 1980 Census data, when they become available.

[5]Dentistry, however, shows very little change. Carter and Carter, 1981, speculate on the basis for this anomaly.

Table 1

Labor Force Participation Rates of Women, 20 years and over, by age, annual averages, selected years, 1955-80

Year	Birth Cohort	Age Group 20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
						Women						
1955	1931-35	46.0	35.3	34.7	39.2	44.1	45.9	41.5	35.6	29.0	17.8	6.4
1960	1936-40	46.2	35.7	36.3	40.8	46.8	50.7	48.8	42.2	31.4	17.6	6.8
1965	1941-45	50.0	38.9	38.2	43.6	48.5	51.7	50.1	47.1	34.0	17.4	6.1
1970	1946-50	57.8	45.2	44.7	49.2	52.9	55.0	53.8	49.0	36.1	17.3	5.7
1975	1951-55	64.1	57.0	51.7	54.9	56.8	55.9	53.3	47.9	33.3	14.5	4.8
1980	1956-60	69.2	66.8	64.1	64.9	66.1	62.1	57.8	48.6	33.3	15.1	4.6
						Men						
1980		87.0	94.7	96.2	96.0	95.1	93.3	89.3	81.9	61.0	28.5	13.1

Source: 1955-75: Perspectives on Working Women: A Data Book. U.S. Department of Labor, Bureau of Labor Statistics. October 1980. Bulletin 2080. Washington, D.C.: U.S. Government Printing Office.

1980: Employment and Earnings, January 1982, Table 3.

Table 2

Labor Force Participation Rates of White, Black and other, and Hispanic Women, 16 years and over, Annual Averages, 1955-81, Selected Years

	White	Black and Other	Hispanic[a]
1955	34.5	46.1	(b)
1960	36.5	48.2	(b)
1965	38.1	48.6	(b)
1970	42.6	49.5	(b)
1973	44.1	49.1	40.9
1975	45.9	49.2	43.1
1977	48.1	50.9	44.1
1979	50.6	53.5	47.4
1981	52.1	53.7	49.9[c]

(a) Data on persons of Hispanic ethnicity are collected independently of data on race; Hispanics may be of any race.

(b) Not available.

(c) 20 years old and over.

Source: 1955-1979: Perspectives on Working Women: A Databook. U.S. Department of Labor, Bureau of Labor Statistics, October 1980, Bulletin 2080: Tables 65 and 66.

1981: Employment and Earnings. January 1982. Tables 4 and 44.

Table 3

Median Income of Year-Round Full-Time Workers by Race, Sex, and Spanish Origin, 1955-1979, Selected Years

Year	Median Incomes of White Men	Percentage of Income of White Men						
		White Women	Black and Other Women	Black Women	Hispanic Women	Black and Other Men	Black Men	Hispanic Men
1955	4,377	65.3	33.5	(a)	(a)	60.9	(a)	(a)
1960	5,572	60.6	41.1	(a)	(a)	66.1	(a)	(a)
1965	6,802	57.9	39.3	(a)	(a)	62.8	(a)	(a)
1970	9,447	58.6	49.4	(a)	(a)	70.3	(a)	(a)
1975	13,233	58.5	57.4	55.9	49.7	76.7	74.4	72.5
1976	14,272	58.7	55.2	54.9	50.0	73.4	71.6	73.0
1977	15,378	57.7	54.9	53.9	49.4	71.8	68.9	71.1
1978	16,360	59.5	55.6	55.1	50.9	79.1	76.6	73.0
1979	18,011	59.1	55.0	54.3	48.4	75.6	72.6	71.9

(a) Not available

Source: Money Income of Families and Persons in the United States: 1979. Current Population Reports P-60, No. 129, Table 67. Washington, D.C.: U.S. Government Printing Office, 1981.

Table 4

Mean annual earnings of year-round, full-time workers by education, race, sex, and Spanish origin, 1979

Years of Education	Mean Earnings					
	White Men	Black Men	Spanish[a] Origin Men	White Women	Black Women	Spanish[a] Origin Women
Elementary						
less than 8 years	11,845	9,752	10,438	6,991	7,174	7,099
8 years	14,580	12,249	13,257	7,995	7,068	(b)
High School						
1 to 3 years	15,279	11,811	13,129	8,856	7,975	7,974
4 years	17,449	13,571	14,715	10,074	9,797	9,530
College						
1 to 3 years	19,361	15,524	16,704	11,416	11,293	10,639
4 years	24,766	18,980	21,900	13,186	14,431	(b)
5 years or more	29,746	26,189	24,427	16,811	16,981	(b)
Total	19,610	13,908	14,491	10,939	10,363	9,590

(a) Persons of Spanish origin may be of any race.

(b) Base less than 75,000.

Source: Money Income of Families and Persons in the United States: 1979. Current Population Reports P-60, No. 129, Table 53. Washington, D.C.: U.S. Government Printing Office, 1981.

Predominantly Female Occupations in which the Representation of Men is Increasing, Selected Years 1950-1980

	Percent Female							
	1950 (a)	1960 (a)	1962 (b)	1965 (b)	1970 (a)	1974 (b)	1979 (a)	1980 (c)
Teachers, except college and university	74.5	71.6			70.4		70.8	70.8
Registered nurses	97.8	97.6			97.4		96.8	
Telephone operators			96.3	96.8	94.3[d]	93.8		91.8
Office machine operators	81.1	73.8			73.5		74.9	72.6
Cooks			63.6	63.9	62.5[d]	58.8		53.3

Sources:

(a) Perspectives on Working Women: A Databook, U.S. Department of Labor, Bureau of Labor Statistics, October 1980, Bulletin 2080, Table 11.

(b) Stuart H. Garfinkle, "Occupations of Women and Black Workers, 1962-74," Monthly Labor Review, November 1975, Table 3.

(c) Employment and Unemployment, A Report on 1980. U.S. Department of Labor, Bureau of Labor Statistics, April 1981, Special Labor Force Report 244, Table 23.

(d) Census of Population, 1970. Occupational Characteristics. U.S. Bureau of the Census. Washington, D.C.: U.S. Government Printing Office, 1973.

Table 6

Selected Occupations Becoming Increasingly Female
(At least 50 percent female by 1980)

Occupation	Percent Female			
	1950 (a)	1960 (a)	1970 (b)	1980 (c)
Editors and reporters			40.0	50.0
Psychologists			35.8	50.9
Radio operators			25.6[a]	53.3
Recreation workers			40.4	57.8
Insurance adjustors, examiners, and investigators		9.4[d]	26.0	57.5
Real estate agents and brokers		28.5[d]	35.8	50.7
Sales clerks, retail	48.9	53.7	66.2	71.1
Bank tellers	45.2	69.3	86.1	92.7
Bookkeepers	77.7	83.4	82.1	90.5
Office managers, not elsewhere classified			39.5	66.6
Collectors, bill and account		21.2[d]	36.3	56.4
Building managers and superintendents			40.6	54.5
Weavers		44.8[d]	59.5[a]	
Decorators and window dressers	32.6	46.2	57.1	71.1
Shoemaking machine operatives			62.1	73.2
Food counter workers		67.5[d]	85.2[a]	84.3[a,e]
Nursing aides, orderlies, and attendants		75.2[d]	86.9[a]	87.5[a,e]
Health service workers	74.6	81.5	88.0[a]	
Personal service workers	49.7	57.9	66.5[a]	

Sources:

(a) Perspectives on Working Women: A Databook. U.S. Department of Labor, Bureau of Labor Statistics, October 1980, Bulletin 2080, Table 11.

(b) Census of Population, 1970. Occupational Characteristics. U.S. Bureau of the Census. Washington, D.C.: U.S. Government Printing Office, 1973.

(c) Employment and Unemployment, A Report on 1980. U.S. Department of Labor, Bureau of Labor Statistics, April 1981, Special Labor Force Report 244, Table 23.

(d) Stuart H. Garfinkle, "Occupations of Women and Black Workers, 1962-74." Monthly Labor Review, November 1975, Table 3. Data are actually for 1962.

Table 7

Predominantly Male Occupations in Which the Representation of Women Is Increasing, Selected Years, 1950-1980

Occupation	Percent Female			
	1950 (a)	1960 (b)	1970 (c)	1980 (d)
Scientific and Technical				
Chemists		8.6	10.5[e]	20.3
Computer programmers			22.8	28.7
Computer systems analysts			13.7	22.4
Engineers	1.2	0.9[a]	1.6[a]	4.0
Pharmacists		10.4	13.1	25.0
Chemical technicians			14.5	22.0
Electrical and electronic technicians			5.8	12.3
Drafters			8.0	17.3
Other Professional				
Accountants	14.9	16.4[a]	26.1	36.2
Economists			11.4	25.4
Lawyers and judges	4.1	3.3[a]	4.7[e]	12.8
Lawyers only			7.0	13.0
Physicians and osteopaths	6.5	6.8[a]	8.9[a]	13.4
Personnel and labor relations workers		27.4	33.2[e]	46.9
College and university teachers	22.8	21.3[a]	28.3[e]	33.9
Athletes and kindred			28.5	42.5
Public relations specialists			26.0	46.8
Managers and Administrators				
Bank and financial	11.7	12.2[a]	17.4	33.6
Buyers and purchasing agents	9.4	17.7[a]	20.8[e]	33.6
Sales managers, except retail			3.4	10.8
Sales managers and department heads, retail	24.6	28.2[a]	24.1	40.5
School administrators, elementary and secondary			26.2	38.6
School administrators, college			22.6	33.8
Sales				
Advertising agents and sales workers			20.7	41.8
Insurance agents, brokers and underwriters			13.1	25.2
Newspaper carriers and vendors			14.4	23.6
Sales managers, retail trade			24.1	40.5
Sales representatives, manufacturing industries			8.2	18.9
Stock and bond sales agents			8.9	16.4
Clerical				
Dispatchers, vehicle		9.1	17.6	34.0
Mail carriers, post office		2.9	7.7	11.1
Messengers		14.9	20.5	27.6
Postal clerks		14.7	30.1	35.4
Shipping and receiving clerks	14.3	8.6[a]	14.3	21.6
Storekeepers and store clerks		17.4	22.4	32.5
Ticket and station agents		21.1	36.4	45.7

Table 7 (continued)

Occupation	Percent Female 1950 (a)	1960 (b)	1970 (c)	1980 (d)
Craft				
Bakers	12.2	15.9[a]	29.7	42.9
Compositors and typesetters		6.3	14.5	34.5
Tailors	19.8	20.0[a]	32.8	46.2
Upholsterers	8.3	10.0[a]	14.9	17.9
Telephone installers and repairers			3.3	8.7
Data processing machine repairers			2.5	8.4
Household appliance mechanics			2.1	5.0
Job and die setters, metal			2.6	7.7
Operatives and Nonfarm Laborers				
Gas station attendants		1.5	3.2[e]	6.2
Bus drivers	2.6	9.8[a]	27.8	44.9
Taxicab drivers		3.7	5.6	9.9
Filers, polishers, buffers			20.3	31.6
Stock handlers			16.5	23.5
Service Workers				
Bartenders		11.5	23.9[e]	43.5
Recreation attendants		14.9	36.2	
Protective service workers	2.0	4.1[a]	6.2[a]	9.5
Guards			5.5[f]	12.4

Sources:

(a) Perspectives on Working Women: A Databook, U.S. Department of Labor, Bureau of Labor Statistics, October 1980, Bulletin 2080, Table 11.

(b) Stuart H. Garfinkle, "Occupations of Women and Black Workers, 1962-1974," Monthly Labor Review, Vol. 98:Table 3. Data are actually for 1962.

(c) Census of Population, 1970. Occupational Characteristics. U.S. Bureau of the Census. Washington, D.C.: U.S. Government Printing Office, 1973.

(d) Employment and Unemployment, A Report on 1980. U.S. Department of Labor, Bureau of Labor Statistics, April 1981, Special Labor Force Report 244, Table 23.

(e) Stuart H. Garfinkle, "Occupations of Women and Black Workers, 1962-1974," Monthly Labor Review, Vol. 98:Table 3.

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APPENDIX C

EDITED STATEMENTS

NON-TRADITIONAL OCCUPATIONS:
Sue E. Berryman
Alexis Herman*

FEMALE-INTENSIVE OCCUPATIONS:
Roslyn L. Feldberg
Karen Nussbaum

WRAP-UP: Ronnie Steinberg

* The edited comments of Alexis Herman were not available for inclusion in this report.

Opening Remarks for Conference on Occupational Segregation: Impact and Strategies for Change

Sue E. Berryman

I think Heidi Hartmann and Barbara Reskin have given us a good overview of what we know about male and female occupational and wage differences: their nature over time, and some of the factors that produce, maintain, and change them.

Social policy problems have life cycles that are more or less completely played out, beginning with problem definition, moving to action and to assessment and adjustment of action. The overview this morning also tells us where we are in this life cycle for the issues of women and work. We are well beyond problem definition -- these occupational and wage differences are real and persistent, not trivial or transitory. We are now at the point of action and change. Research in this area thus needs to support action -- identify levers, design change strategies, assess their success.

From this perspective I would argue that we have had enough research on what produces and maintains women's and men's occupational and wage differences. These studies have proved illuminating, although remember that, since these are historical events that we are trying to understand, we can construct an infinity of explanations of them. More important, we have to remember that the factors that produce and maintain women's and men's occupational and wage differences are not necessarily the ones that produce change. In other words, even if X produces Y, we cannot conclude that eliminating X will necessarily eliminate Y. This is a simple logical mistake that we make over and over again in public policy analysis. X may produce or maintain Y, but A and B, not X, may change Y. We need to concentrate our analytic attention on the A's and B's.

Before we can be thoughtful about ways to change Y, we have to decide what we mean by Y. In other words, we have to decide what objectives we have for women and work. I am astonished by how much we talk about job desegregation without regard to objectives. Job desegregation is a means. If we are not clear about our ends, we cannot tell how much we need desegregation or of what kind. It is also important to clarify our objectives because different ones imply different action strategies.

All of us in this room have our own set of objectives. I have four that I'd like to list here simply to start us off. They are objectives that I care deeply about, but they may not be your list.

(1) Eliminate the wage differentials between men and women.

(2) Increase freedom of occupational choice for both sexes.

(3) Minimize the conflict between work and family responsibilities (or, more positively stated, integrate work and the family more closely).

(4) Establish a social agreement that labor is valued without regard to sex.

There are obvious connections among these four objectives. For example, progress in achieving the last three objectives affects progress with the first. Lack of change in wage differentials signals lack of progress with the last three. I care about the first objective, not only because of what it tells us about the other three objectives, but also because of the increase in female poverty in this country, an increase attributable to increases in households headed by females of working age.

The working objective is clear. It has an obvious economic effect, in that its achievement will reduce barriers in the labor market and increase the ability of both men and women to strike better economic bargains for themselves. It is no accident that as women have been able to move more easily among occupations, shortages have developed in two of the three classically female occupations (nurses and secretaries). The baby bust has precluded numeric shortages in the third occupation (teaching), but increased occupational opportunities for women are showing up even here in the form of a strong decline in the quality of women now entering teaching.

I argue that the third objective is very important for two reasons. First, until we reduce the real and perceived conflict between work and family responsibilities, men will continue to be reluctant to assume more child-rearing responsibilities and women will continue to make work choices that reduce their lifetime earnings relative to men. Even with the enormous increase in the labor force participation of married women and women with children, the first of the two tables that I passed out (Table 1) shows that marriage and children still have marked effects on women's labor force participation -- especially on the participation of women with children under six.

The second table shows that even in 1978 women workers were almost three times more likely than men workers to work part-time. When we look at the number of non-agricultural workers on <u>voluntary</u> part-time schedules, one-third of them are male and two-thirds of them female, the women on part-time schedules being concentrated in the prime child-bearing years. (Note that the

prime child-bearing years are the same ages that for men represent the prime work years.)

A more positive reason for the third objective is to help women and men better integrate the two main sources of vitality for human beings: work and family. At least in the post-industrial countries, the family will never again be the center of work, and work cannot be the center of family. However, we can organize work to be considerably more harmonious with family than it now is.

The last objective relates to the concept of discrimination. Many economists continue to interpret the effect of sex on wages as indicating misspecified models or measurement error. These two sources of error probably account for some part of these estimated effects. However, as Glen Cain observes, neoclassical economic theory does not persuasively explain discrimination. It does not take into account what we might call "status markets." And everything I have observed in the laboratory or have read in scores of anthropological ethnographies shows that cultures allocate rewards relative to status characteristics, not just relative to workers' productivity. These characteristics can vary by time and place, but include sex, race, age, and religion. In the United States we have a social agreement that women should get less money than men, and all members of the culture have been parties to that agreement, including women. Again, until we change our social agreements about the bases on which we should reward labor, we will be able to make only limited progress with wage differences between men and women.

As I noted earlier, these different objectives have different action implications. To make progress with the first objective (eliminating wage differences between men and women), I argue that we should concentrate on the last three. The second objective, increasing freedom of occupational choice, involves job desegregation. We have already tried several strategies for achieving desegregation and are accumulating knowledge about their success under different conditions. I want to stress Nancy Perlman's point that organizations' human resource practices are key to opening up and retaining women in non-traditional options -- their recruitment, hiring, training, use, compensation, promotion and retention practices.

We need to pick our desegregation shots realistically and cleverly -- realistically, in that we should not target predominantly male occupations when they have high unemployment rates (e.g., construction workers) and cleverly in that we should pursue long-term strategies consistent with structural shifts occurring in the economy. In the last 20 years alone the "market shares" of the major occupational categories have changed noticeably. White collar workers have increased from 43% to 52%, attributable to about equal increases in the professional/technical and clerical groups. Blue collar workers have decreased from 37% to 32%, a decline primarily attributable to a decline in operatives. The service sector has remained fairly stable, attributable to off-setting declines in private household workers and a 3% increase in other service workers.

In our concern about occupational desegregation, we should not ignore what I think may be opportunities to develop important career ladders from traditionally female clerical jobs to the family of computer jobs -- occupations that have high projected growth rates, in which there are current and projected shortages, and that pay high wages. Technology increasingly available to secretaries, text processors, could become the connection between these two worlds.

The third objective, reducing the conflict between work and family, has opportunities for very innovative social analysis and action. Some of the European countries, especially the Scandinavian ones, have made more progress here than the United States; it would be useful to know what they have tried and with what success. The Ford Foundation might want to consider reaching an agreement with 2 or 3 large corporations to try the following kind of social action: (1) assess, in conjunction with these firms, whether and how their human resources practices reduce or exacerbate conflicts between work and family responsibilities; (2) assess how practices that increase the conflict might be changed; (3) implement these changes; and (4) monitor their consequences, including dollar costs.

The final objective, establishing a social agreement that labor should be valued without regard to sex, requires collective political action, the comparable worth lawsuits or negotiated union agreements being excellent examples. I am not a lawyer, but my impression is that we are losing a fair number of comparable worth suits. If this is true, the Foundation might work to determine the reasons for this record and invest resources to improve the success rate.

Let me close with three quick points. First, it is important to try to pursue our objectives in conjunction with men. We have to live and work with each other, and any change strategy that does not come to terms with the real needs of both groups will not succeed or will carry heavy political costs.

Second, it is important to monitor our actions in order to assess their effects on women, men, and our institutions. Mindless action is no more attractive or responsible than irrelevant research.

Third, we need to monitor our actions simply to judge the effectiveness of our efforts. In doing so, we should be careful to look for change where and when change is more feasible -- for example, among younger, not older women; in expanding more than contracting occupations; under conditions of economic growth more than severe recession. We also need realistic expectations about the time required for change to occur in order to measure progress toward our objectives. Mannheim said that the turning radius of a society is a generation. This does not mean that we shouldn't expect many changes in shorter time periods -- we should. It does mean that we are in for the long haul.

TABLE 1

LABOR FORCE PARTICIPATION RATE BY SEX, MARITAL STATUS, AND PRESENCE OF CHILDREN[a]

Marital and Dependency Status	Males ≥16 yrs.		Females ≥16 yrs.		Females ≥16 - 44 yrs.	
	1960	1980	1960	1980	1960	1980
Never Married	55.5	70.7	44.1	61.2	41.8	63.7
No children <18 yrs.			NA	61.8	NA	64.5
Children 6 - 17 yrs.			NA	67.1	NA	70.0
Children <6 yrs.			NA	43.2	NA	43.3
Married, Spouse Present	88.9	81.0	30.5	50.2	31.6	60.3
No children <18 yrs.			34.7	46.1	58.4	78.8
Children 6 - 17 yrs.			39.0	61.8	40.3	65.9
Children <6 yrs.			18.6	44.9	NA	45.0
Other Marital Status[b]	59.3	67.0	40.0	44.1	60.3	75.1
No children <18 yrs.			35.7	35.2	69.6	83.6
Children 6 - 17 yrs.			66.2	74.3	72.6	78.2
Children <6 yrs.			39.8	59.2	NA	59.6

[a]Source: Table 22, U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 363, *Population Profile of the United States: 1980*, U.S. Government Printing Office, Washington D.C., 1981.

[b]Other Marital Status: Widowed, divorced, married with spouse absent.

TABLE 2

PERSONS WITH WORK EXPERIENCE DURING THE YEAR BY SEX AND EXTENT OF EMPLOYMENT[a]

Year and Sex	Fulltime[b]				Part-Time[c]			
	Total	50-52 weeks	27-49 weeks	1-26 weeks	Total	50-52 weeks	27-49 weeks	1-26 weeks
1950								
Males	90.2	65.4	16.7	8.0	9.8	3.1	2.2	4.6
Females	73.4	36.8	17.9	18.7	26.6	8.2	5.1	13.2
1970								
Males	87.6	66.1	13.1	8.4	12.4	4.4	2.6	5.3
Females	67.8	40.7	12.8	14.3	32.1	10.0	7.5	14.6
1978								
Males	87.9	66.3	12.7	9.0	12.1	4.0	3.0	5.1
Females	67.8	43.7	12.2	12.0	32.2	10.9	8.5	12.7

[a]Source: Table 48, U.S. Department of Labor, Bureau of Labor Statistics, Bulletin 2070, *Handbook of Labor Statistics*, U.S. Government Printing Office, Washington D.C., 1980.

[b]Fulltime = ≥35 hours/week.

[c]Part-Time = 1-34 hours/week.

Notes on Issues and Approaches to the Problems of Clerical Work, A Female-dominated Occupation in a Period of Major Technological Change

Roslyn L. Feldberg

I'm going to be talking about the female-intensive or female-dominated occupations briefly. I think it is a category that requires not only different strategies, but also particular emphasis. Not only is that where most women are but, according to the figures that Heidi and Barbara gave us this morning, that's where most of the new jobs are going to continue to be. People have already made it clear that the issue is not to try to bring men into the female-dominated occupations. That is certainly not my major concern. What does concern me are the low wages, poor job opportunities and the limited kinds of work that the female-intensive occupations represent; that is, my concern is with the consequences of occupational segregation.

There are three basic issues I want to talk about. These relate particularly to my work on clerical work, but I think also apply to other female-intensive, female-dominated occupations. The first issue concerns employment: the number of jobs and the nature of jobs. Heidi and Barbara talked about the fact that the proportion of women in part-time work has not changed, but the tremendous expansion in the number of women in the labor force means that the number of part-time jobs has increased enormously and it is not at all clear that much of this part-time work is voluntary. There is also evidence that employing organizations are attempting to deal with what they consider to be the worst jobs, not by improving these jobs, but by hiring part-time and/or temporary employees for them. This strategy retains the undesireable jobs and make them worse because as part-time or temporary jobs they don't have fringe benefits or other benefits of employment that are associated with real jobs. On the one hand, it is not clear that women can afford to take these jobs. On the other hand, it is not clear that women can afford not to. I think we have to look closely at the nature of employment in these areas. Finally, a dimension of employment that is not talked about very much but is becoming more and more evident is unemployment. The UAW Contract made it very clear that white-collar workers were going to be laid off as well as production workers. There were contract provisions for proportional numbers of layoffs among white-collar employees which includes clerical workers. So unemployment is an area which has to be looked at, especially as employers themselves are becoming more interested in keeping down the size of their clerical labor force than was true 30 or 40 years ago.

The second issue is wages. Clerical wages at entry are still incredibly low in many industries. In addition there are small increments and the very low ceilings on wages for workers in many of the female-intensive occupations. Many workers, at least in the clerical areas, reach their wage ceilings before the age of 30. There they are for another 30-35 years and all they get are general increases, if they work in a company that gives cost of living increases.

Third, there is the issue of working conditions: the quality of the working environment, the nature of the work experience, the effects on workers' mental health and sense of themselves. There is a great deal of concern, with the introduction of new machine paced technology, about stress and clerical work. There has been a fair amount of research done in Sweden on the difference in stress levels depending on the way in which technology is used and the way in which jobs are organized. There has been much less done in the United States. Issues of the carryover of home to work (such as what kinds of pressures get carried over, how do both the time and the kinds of demands that people face in the workplace affect their ability to mesh their home life and their worklife) are yet to be researched.

The fourth question is whether the rate of growth in clerical jobs will be as great as it has been projected to be. Projections in the United States show the clerical workforce continuing to expand. In contract projections for Europe show overall contraction. Very little attention is being given in the United States to the possibility of job contraction in particular occupations or to displacement. It may be that we will face a much more serious employment problem for women than we have expected, if new job opportunities do not materialize and workers are being displaced and laid off from that sector.

Finally, I want to say briefly that unionization is increasingly important in clerical work. I will leave that topic to Karen to talk about it. However, I think it is very important to note that we know that unionization does affect wages, and unionized clerical workers earn on average 25-30% higher wages than non-unionized clerical workers. If we're talking about reducing wage differentials between employed men and employed women, then collective bargaining should be at the heart of that strategy.

I'm going to talk in a bit more detail, about office automation, and its relation to four of the areas I talked about: 1) employment, 2) wages and working conditions and 3) unemployment. After studying clerical work in the United States for 4 to 5 years, I can tell you mainly about what we don't know. We don't know how technology is being used to redesign jobs, what kinds of jobs are being created, what proportion of them will depend on particular computer-based skills, and what proportion of them are new jobs. We also don't know how those new jobs are being classified in terms of skill levels required and the possible wages, what kinds of job ladders are being created, how those jobs feed into firms' labor markets and whether those jobs are linked to existing

clerical jobs. From my own studies,* I can say that there seem to be distinct, separate job lines. These separations are based partly on training/education, and partly on race. Minority women are disproportionately concentrated in the data-entry jobs at this point. These jobs have very, very short career ladders. They do not routinely link up to any other jobs or any other part of the organization. One important research and action project would be first to look at the kinds of job ladders that have developed in these organizations and then to establish models of job ladders that would link existing clerical jobs and computer jobs to create career ladders.

We do not know how many companies are using some version of the part-time/temporary strategy to deal with boring, routine work. This is a research question. If the practice is widespread, then it is an issue to be dealt with at least in part politically. For example, where European employers are legally required to pay unemployment and health benefits to part-time workers, the creation of part-time jobs is lower and more full-time jobs are created.

There has been a great deal of talk that the introduction of computers is going to create better jobs for women. That is only a small part of the picture. There are some better jobs being created, although they are not necessarily women's jobs. There's also a considerable amount of de-skilling. Women who might otherwise have gotten secretarial positions may now be channeled into word processing operator positions, those jobs tend to have fewer skills that are recognized by companies. I think that we have to realize that skill is a political term. What counts as skill is what the companies have traditionally counted as skills. One major basis on which jobs have low pay is that work knowledge, the understanding of the work required in order to do a good job, is not acknowledged or paid for. The workers know that their more experienced co-workers have a better understanding of the work. They turn to them for help on complex questions, yet the kind of skill derived from experience is not usually recognized. What is recognized is "productivity" -- how fast people can do the job, how many phone calls they can answer, how many forms they can fill out, how many key strokes they can type. I was pleased to hear Dina say that companies were beginning to think about training workers in the communication industries as long term employees. I did not see that happening in the insurance area, public utilities and some banks. Workers were given very little training, especially for the first few years, and very narrow training. Incidentally, I was also told that some companies were not willing to hire experienced data entry workers who had trained on a different brand of equipment. It was said workers movements become so automatic that they automatically move to the wrong places on a

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* Much of the information and analysis offered in these remarks derives from research supported by a grant (#MH-30292) from the Center for Work and Mental Health, National Institute of Mental Health, "Women Clerical Workers: The Impacts of Job Conditions." The work has been conducted jointly by Roslyn Feldberg and Evelyn Glenn, and will be reported in more detail in a book in preparation.

different keyboard and that it was too expensive to retrain them. The companies prefer to hire people who don't have any training. All of this affects wage scales, job ladders and opportunities. If the skills involved in doing the work aren't acknowledged and if workers are given very narrow training, then they do not have the qualifications to apply for higher level jobs even when these are posted. Some of these practices within the organizations become institutional barriers. Even if workers have figured out for themselves what the larger paramenters of their jobs are, if their job descriptions do not include the knowledge/skills they gain as part of the job requirement, then they can't prove that they have this knowledge/these skills. It becomes a vicious circle. If jobs are defined too narrowly, workers are, by definition, trapped in them.

This leads to a couple of issues that I want to mention briefly. First we need to develop models for job training and having that training relate to the job ladders as I mentioned. We need to know what kind of training is available to which workers. Firms are already experimenting with new approaches to using technology, with certain kinds of job classification systems and with ways of moving workers through that. We don't know yet what's being done. In many of the organizations managers themselves have not figured out on what grounds they are moving ahead, so they can't provide this information even if they want to. Different units within organizations are using different approaches. We need to know if there are "success" stories, and we need to know if certain approaches don't work. One big problem is access. Certainly, the foundations could help in getting access.

Second, we need to address the issues of the stress of machine-paced work and its productivity. It's not clear whether computerized offices are really more productive. People do process more forms, but it's not clear whether more business is accomplished through processing all that information. Also, it's not always clear that computerizing a particular operation is the most effective way to get it done. If the volume and pressure of machine-paced work as currently organized are stressful, and that kind of work is not contributing significantly to accomplishing business, then the way new technology is being used must be reconsidered. No one seems to know.

Third, there need to be models established for how workers and unions can participate in reviewing the introduction of the technology and in monitoring its effects on employment, on worker health and safety, and on the quality of the work experience. If companies want to be able to say, "Yes, we have this kind of program and we have worker participation in it and we are as sure as we can be that the program is being run as well as possible," then baseline information on the impact of technological change is essential. Unions will also need such information if they are going to participate in monitoring change.

Finally, I think it is very important that people pay more attention to what happens to unemployed clerical workers and their families. Because clerical work is predominantly a female job, many clerical workers are self-supporting, supporting families or making an essential contribution to keeping their families above the poverty line, however that is defined. So we need to know what happens to the women and their families as unemployment develops in the clerical areas.

My emphasis would be to put research funds into examining the relationship between clerical work and the new technology. In the area of employment and wages, we need to examine the following: 1) how office automation and the use of new technology are affecting the number and kinds of jobs in clerical work, 2) what training programs and job ladders are found in organizations using the new technology and, related to that, we need to develop models for training programs and to create model job ladders which link existing clerical jobs to new and higher level jobs, 3) the relationship between job ladders and wage levels. In the area of working conditions, we need to know more about: 1) how clerical work is being organized and what working conditions are being created in offices using new technology, and 2) how specific ways of organizing clerical work affect the clerical workers -- stress, health and safety, mental health and work-family linkages. Last, I think we need to look at the extent of unemployment and the prospects of future unemployment.

I want to emphasize that all of the research proposed above has to target specific industries. The situation is very different in industries where clerical workers are a support staff and those where they are the basic labor force of the firm. Some of the issues have different implications for different groups of workers. For example, black and other minority women, particularly non-English speakers, have gained access to particular areas of the clerical labor market. Those groups would have to be targeted to understand their particular concerns in gaining access to better jobs. Finally, I think that if we do not respond to the ways technological changes are being implemented, the already serious problems women face in employment in the female-intensive occupations are likely to become more severe.

Office Automation: A Potential Solution to the Female Job Ghetto

Karen Nussbaum

As a practitioner, I sometimes think that researchers have the burden of explaining things that appear obvious to practitioners. I was struck this morning when one researcher said she had to prove that women were not doing this -- creating sex segregated job pools -- to ourselves. We at 9 to 5 call that the "Lemming Theory" -- women flinging themselves wantonly into a stagnant labor pool.

The question we need to answer is how do we change the conditions for women in the female-dominated jobs? There are three ways: one is to organize, particularly through unionization. This is the major strategy for achieving higher pay.

The second way is to educate and change public opinion, establish a meaningful debate. Our concerns are social and moral issues. We have to raise these issues to the public in a way that allows us to engage in the debate and broaden it.

The third way is to affect public policies: enforcement of equal employment opportunity laws, and establishing new standards, regulations, and laws affecting the working family. These methods of changing conditions for working women have to work in combination. Different aspects will be more important depending on the particular goal we are trying to achieve. This is the overall framework.

I will focus my remarks on office automation and its impact on women's employment. Office automation warrants our attention because it will have a massive effect on a large number of jobs. Furthermore, we <u>can affect</u> automation. It is a process influx, not an accomplisned fact. The ability to have a positive effect on office automation is much greater than the ability to affect manufacturing automation, for example -- we should take advantage of our opportunity.

Automation poses grave dangers to office workers. But these dangers could be turned into their opposites -- into opportunities that would help solve the problems of sex-segregated women's employment. Our task is to create a climate where automation will enhance women's work, reversing the current trends set in motion by management to de-skill, downgrade, and de-value office work. The dangers I will discuss are discrimination, creating mindless jobs (de-skilling and downgrading jobs); health and safety problems, especially seen in an epidemic of stress-related diseases; and homework and job loss. My remarks will be very schematic because of limited time.

We all know the traditional workforce in America is characterized by discrimination. The new, automated jobs are following suit, recapitulating discrimination and job segregation by sex. As the new jobs increase, we have the opportunity to break the old patterns of employment discrimination. But this will only happen as a result of deliberate action. We need to educate employers, the public and women workers themselves about the need and possibility of bringing women into higher level computer jobs, and to call for computer career training for women, career ladders, promotional opportunities and enforcement of affirmative action.

The problems of the degradation of the jobs and health and safety are largely determined by the design of the machine and the design of the jobs. The problems in machine design are relatively easy to solve. The machines can be built to be safe, and not to endanger the health and well-being of users. In the United States, however, computer manufacturers and management are choosing to ignore evidence on building safe equipment in the absence of loud demand for it. In Europe, where there is a demand for safe machines, they are built and sold. American companies produce a much higher quality video display terminal for European markets than they do for American markets. We need to demand machinery that doesn't endanger the health of people working on it. Some of the problems are very simple: poor character design, glare from improper lighting; keyboards and screens that are not adjustable, poorly designed chairs. The concern about possible x-ray emissions is also substantial.

One very serious problem related to use of video display terminals that is extraordinarily easy to correct is the damage done by continuous use. The solution? Rest breaks. As simple as this sounds, it is being ferociously resisted by American employers. Standards in some European countries prohibit working on the V.D.T. more than four hours per day and require frequent rest breaks. The National Institute of Occupational Safety and Health in the U. S. have very good proposed regulations on rest breaks that are being ignored by management.

Job design refers to the actual tasks performed by the worker. The new automated office jobs are bad jobs. The jobs are highly routine, repeating one small task over and over for 8 or 10 hours a day. Nobody wants to sit and type nonsense information into a terminal all day -- you don't need a college education to hate that kind of job. You do need a job, however, so more and more people are going into data and information processing. The irony is there is nothing about the technology that demands the jobs be designed this way. You can increase productivity with the use of more advanced machines and still retain jobs that have some inherent interest, that have a variety of tasks, in which you know something about the overall product you are producing. However, there is no research on design of office jobs that I know of and certainly no interest on the part of employers to create jobs that are not rationalized, jobs that retain some of the qualities of the old secretarial jobs -- qualities I did not fully appreciate before understanding what automated jobs are like.

Related to the problem of job design is occupational stress. Stress is the occupational hazard of the computer age, much in the way that loss of limb was the characteristic occupational hazard of the industrial age. Until recently, popular opinion blamed stress on the victim. Someone experiencing stress was someone who wasn't strong enough to deal with her life. Stress is now being recognized as a problem of real working conditions -- stress doesn't exist in your head, it exists in your office. If you suffer from stress, don't call a psychiatrist, call an organizer and do something about your working conditions.

Stress is exacerbated by the new technology. Two new studies illustrate the point. The National Institute of Occupational Safety and Health in 1981 found that clericals who work on video display terminals full time have the highest rate of stress ever recorded, higher even than air-traffic controllers. The other study is the Framingham Heart Study in 1980 by Dr. Suzanne Haynes which found that female clericals with low wage-earning husbands and children had a rate of heart disease that was twice as high as that of men and twice as high as women in general. The reasons were "economic stress" -- that is, no money -- long working hours because of women's home responsibilities in addition to 40 hours of paid work; unresponsive bosses; and dead-end jobs.

Problems which exist in clerical jobs are made worse by the technology. The main trend in automation is to rationalize the jobs even further, to exaggerate all of the worst problems in clerical work and institutionalize them. For instance, if you nave an unsupportive boss and that creates stress, imagine what it's like when you are being supervised by your machine. These machines can monitor your error rate, give off a beep when you make a mistake, monitor your key strokes and production, and write out a report on you at the end of every week, or every day, or every hour. So, the problems are being systematically built in to the new automated jobs as opposed to being taken out.

To correct the problems with machine design we should create competition among computer vendors to build safe machines, create a public demand for good machinery so there is an interest on the part of vendors to meet that market. Who is going to be the Volvo of office machinery, and who the Pinto? On job design, we have to create more public accountability for the consequences of the paths being taken by managements.

Office homework and job loss are complicated and important issues. Homework is seen by many as a "New Age Innovation." Homework is performing work in the home with home computer terminals. The main target for homework at this stage is professional workers, and homework does provide some benefits to professionals.

There are, however, few benefits for low wage women workers. A particularly cruel dilemma is that many low-wage working women will turn to "homework" as a solution to the problem of inadequate childcare. The result will be millions of women working two jobs simultaneously -- data processing in their living rooms while they care for their children at the same time.

Job loss due to office automation is predicted by European experts to be massive within the next 15 to 20 years. The U. S. Department of Labor, however, doesn't even have a method for adequately measuring the job loss due to automation. What jobs will replace the millions of clerical jobs to be lost due to automation over the next twenty years? This is a social problem, not a problem that affects only clerical workers as a group. The problem of job loss demands sweeping new public policies.

The problems and challenges posed by automation are profound. What we do today in shaping the policies of office automation could provide solutions to the problems of chronic discrimination and injustice faced by women workers, or could lead to the further immiseration of women workers. Our job over the next five to ten years is to create the public demand for a positive future, and to do the research that provides the specific solutions.

Conference Wrap-Up

Ronnie Steinberg

When discussing an issue as occupational segregation, its impact and strategies for eliminating it, we are dealing with a highly political issue. So much of what was discussed today has to do with political tactics and strategies, in an immediate and more long-range sense. Moreover, when we are talking not only as activists and policy-makers, but as researchers, we need to discuss these issues in terms of a larger four step change process Sue Berryman identified for us this morning.

The first step is research that identifies the problem, not only in terms of numbers but in terms of process. The second step involves an action plan. The third step requires implementation and assessment of the action plan. Finally, the fourth step involves modification of the action plan. In the case of comparable worth, for example, we're trying to do research and an action plan interdependently and dynamically so that each provides food for the other. Under the best conditions, the long term goal will be to develop the broadest possible comparable worth standards under Title VII. Better yet, that comparable worth will become part of employees' set of rights on the labor market.

I think we arrived at a consensus that we were not only concerned with occupational segregation in and of itself but with the consequences of it.[1] Moreover, the consequence that seemed to be most frequently highlighted at this conference as well as in the Reskin-Hartmann paper is the link between occupational segregation and the wage gap. In fact, the wage gap has become a symbol, if not a profound indicator, of the position of women relative to men on the labor market.

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[1] After the presentation of these final remarks, a number of participants differed over whether the primary concern was with occupational segregation or its consequences.

When we begin to translate what we mean by a concern with the consequences of occupational segregation, I again move back to four goals listed by Sue Berryman in her remarks. They are: First, eliminating the wage differences between women and men. Second, increased freedom of choice. Third, minimize the conflicts between work and family. And fourth, the establishment of egalitarian values and egalitarian relationships.

The situation for women is not homogeneous, however. As the overview paper indicated, and Alexis Herman discussed in greater detail in her remarks, when we are designing programs or beginning to identify projects, it is important to understand which groups of women we are targeting. What context and settings do we want to target -- settings not only in terms of geography but also in terms of types of firms, types of industries, and so on. Also we agreed that we need to have multiple emphases, particularly, targeting different groups in different settings. Whether we are concerned with nontraditional occupations or female intensive occupations or issues that flow from one or the other will be in part a function of which projects we want to establish and fund. At this point, we shouldn't be trading one off for the other. Rather, we should be concerned with what is going on out there that, with support, can be successful programs, as well as provide models for the development of other programs. We need to have an emphasis both on non-traditional occupations -- moving women into higher paying blue collar and technical jobs as well as moving them into managerial, professional and leadership positions -- and on female intensive occupations -- upgrading jobs through comparable worth as well as shaping the character of new occupations, including the introduction of automation and its consequences.

We talked at length about political strategies and tactics. We listed a whole series that seemed to work interdependently to bring about large scale change: Social pressure, in turn plays back on changing attitudes in the family, on changing attitudes in the political environment, and, indeed on changing attitudes in all kinds of institutions. These changing attitudes, then, impact back on what happens in work organizations, primarily through organizing women, through education and changing public opinion, through the pressure of public opinion on corporations, by affecting public policies, through building legal cases, and through building research profiles. For example, one of the things I discovered in my work around the issue of comparable worth, is that the information I bring into activist settings becomes a resource to individuals -- a resource that, unfortunately, seems to count more than the experiences of women when they are pressing for change. So all the things we have talked about in terms of tactics -- litigation, information dissemination and public education -- become resources around which we develop large-scale change efforts, not necessarily to eliminate occupational segregation but instead to eliminate the labor market inequality that derives from it.

Next I am going to try to highlight some of the recommendations for

possible foundation funded projects that the participants wrote down after lunch.[2] First somebody suggested that we fund an Institute for developing new occupations related to the computer. This would be a massive intervention, on the scale of the National Committee on Pay Equity. This Institute would find and describe the clerical occupations that are being created by the computer, and would sell these new definitions to employers who would then use these occupational categories to develop career ladder structures in their work organizations. The Institute also would develop lots of written materials for lots of different arenas and disseminate that information as public education.

A second suggestion is to study practices of firms which continue sex segregation to come up with a Code of Practice for overcoming segregation. This Code could be widely used. We could ask corporations and work organizations to disseminate it.

Somebody suggested a mass media project to educate parents about the high probability that their daughters will have to spend many years in the labor force supporting themselves and their children. Parents need to understand the economic consequences of entering female-intensive occupations to help their children make occupational and career choices.

Other suggestions include: Explore the tipping phenomenon in resegregation. Specifically, review the evidence for it's existence, the conditions under which it does or does not occur, and fund research on what keeps jobs integrated. Determine how to build progressive state and local involvement in broader policy enforcement; determine how to build expert opinion, public support and political connections so that women's labor market equality will be a major priority of the next administration. In general, fund research on the impact of enforcement so that we have a better understanding of the role of federal enforcement. Under what economic and social conditions does it work best, for example? Is it better to use incentives or punishment? Do these conditions differ by industry or organization? (Again, we are not trying to carry out enforcement in a homogeneous environment.) What are the implications of the federal government turning enforcement over to the states -- as has been the "threat" of the current administration?

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[2]These were synthesized by Cynthia Chertos, Research Associate at the Center for Women in Government.

There are a series of suggestions for fundable projects around female-dominated occupations: Develop career ladder models for moving clericals to new computer-related jobs. Do research on job ladders that are developing in firms in the forefront of computerization. See the degree to which there may be job ladder linkages between jobs that are being deskilled and jobs that are being upgraded by computerization. (This would be to avoid the dual stratification phenomenon to undercut Civil Rights efforts that Daniel Patrick Moynihan wrote about in the mid-1960s.) Develop better measures of computer-based jobs in the clerical occupations: What occupations are being displaced? What jobs are being created?...Enhanced?...Deskilled?... Which workers?...Which industries? We need these measures so that we can begin to understand trends. To borrow from Karen Nussbaum's remarks, take difficult situations and create opportunities out of them. At a time when we can have an impact on what happens in terms of the introduction of automation, experiment with certain kinds of job redesign. In all of this, recognize the middle age and older women may suffer special problems in certain industries -- either due to re-entry or skill obsolescence. There may have to be special programs for them so that they will not suffer particular disadvantages as a result of technological innovation.

A couple of projects concerned with unemployment for women in female-dominated jobs were suggested: What happens to women and their families when women in low-paying female intensive occupations are unemployed? (We really don't know that since we only have some studies about unemployed women in blue collar jobs.) Study the scope of potential job loss due to automation in clerical and service industries: What are the consequences? How can we plan for the employment future of these workers?

Concerning work and family issues: Study the conflict between work and family for women in female intensive jobs, especially single parents and married mothers with preschool children. Fund pilot projects that involve within-firm provisions for alternative work schedules and child care options, which could become models for dissemination to other work organizations. Develop non-traditional career planning and decision-making programs for rural teenage mothers. Explore the issue of child care leaves, rigid work-hour arrangements, and how that affects career advancement for women. Finally, work with the military to identify conflicts around issues of work and family arising with the increased enrollment of women, both enlisted and officers: What is happening? What policies would have to be changed to reduce the conflict?

Concerning desegregation: Investigate the process of job choice, especially in post-adolescence. Second, evaluate clerical transition programs to blue and white collar jobs that already exist and develop model programs on the basis of it. Disseminate this information to employers, unions, and advocacy organizations. Third, continue support for model programs for getting women into male intensive jobs. Fourth, continue as well research and action programs to identify structural barriers to women's advancement in the public and private sectors.

Concerning education, there were two suggestions; First, conduct research on how to break down sex segregation in vocational education. This would include an analysis of the relative importance of various courses, such as math, for widening the range of vocational choices. Second, establish linkages between community colleges, technical schools, local businesses and community based women's organizations.

Finally, someone suggested a large project to continue to research the link between occupational segregation by sex and the "unhappy consequences" of it -- as, for example, wage discrimination, limited promotional opportunities for both men and women. We need to convince the skeptics -- i.e., employers, neo-classical economists and so on. If we can't convince them, we can make it difficult for them to contest our findings. We need as well to be able to argue that separate is not equal, as we did for housing desegregation.

In conclusion, I would like to raise three points: First, we need to document successes. I think there was a lot of agreement about that. We need to find out what makes for successful programs in different institutional arenas. In training programs: Many of us have information that has not been brought together and systematically assessed. We need to do that as well for union action on behalf of equal employment for women and minorities. We need to find out about successful enforcement efforts, particularly compliance in private firms. We need to document success around resolving the conflict between work and family -- i.e., programs in work organizations (whether in the U.S. or in other countries) which have had a positive effect on equalizing roles in the family. Moreover, we need to build a record of success, particularly in the area of comparable worth. There needs to be a lot of varied activity around the issue of comparable worth.

Second, concerning automation: There was a lot of talk about job redesign to identify how technology can be introduced into work organizations so that it has positive consequences for employees and employers. I think employers don't know how to do that yet. We need to do a lot of careful work to develop model programs which can be disseminated widely. We also need to estimate whether there will be unemployment consequences to automation.

Third, we organized the conference around the issue of occupational segregation and further dubdivided it into two sub-themes of non-traditional occupations and female intensive occupations. The way in which the discussion evolved during these two sessions was very interesting to me. Certain issues that were very hot ten years ago seemed to be of less intense concern today -- so that, for example, had the conference taken place a decade ago, the sub-theme of non-traditional occupations would have gotten the most intense discussion. This is because, at that point, projects were being funded that were at the cutting edge of this new area of interest. In other words, we were beginning to understand what the issues were, what the programs should be and what start-up efforts we should fund in the area of non-traditional occupations. Now, we're that way for the area of female

dominated occupations. When we deal with issues as comparable worth, unionization, and introducing automation into female-intensive jobs, we're dealing with cutting edge issues. In fact, I was interested to see that from my observation, the most intense discussion happened around the issue of automation -- in part, because we have figured out the least about that area. What I want to stress is that we should not confuse the intensity of a discussion around a cutting-edge issue with the need for balance in funding diverse projects and programs addressing multiple issues under the larger theme of occupational segregation and strategies to eliminate it.

For example, in the area of non-traditional occupations, we have a lot of programs that are successful, effective, and losing funding -- largely because of the loss of CETA monies. We must continue to fund these programs because we cannot afford to lose the experience gained through successful programs. We don't want to have to reinvent the wheel. Also while there was little discussion of the issues surrounding the work and family conflict and a less intense discussion of the issue of non-traditional occupations than I expected, I think that a lot of concrete suggestions about activities, programs, policies, and research have been made that cut across both themes. These should not be overlooked by the intensity involved when we are trying to define a new issue. With these remarks, I will open it up to additional comments and questions.