Contractual Arrangements

Households, Employment, and Gender. A Social, Economic, and Demographic View. PAULA ENGLAND and GEORGE FARKAS. Aldine, New York, 1985. x, 237 pp., illus. $29.95; paper, $14.95.

Women's roles at home and at work have changed remarkably in the United States over the past 40 years. Female participation in the paid labor force has increased dramatically, especially for women with young children. As the divorce rate has risen, so has the proportion of children living in single-parent, female-headed households. Fertility rates, which had been falling for decades, rose spectacularly and unexpectedly in the 1950's and have been dropping steadily since the mid-1960's.

At the same time, the specific roles filled by men and women in the household and in the workplace have changed little in four decades. Caring for children and keeping the household in order are still primarily the responsibility of women, although on average women devote less time to these activities than they did 40 years ago. Clerical and service work still account for most of the employment available to women, although women have made some inroads into male-dominated occupations in recent years. Narrowing of the wage gap between men and women is barely perceptible.

According to economists, these trends can be attributed to rational choices made as men and women strive to become as well off as possible (both psychically and financially) over the course of their adult lives. Increasing female labor force participation and declining fertility can be explained largely by rising real wages in female occupations, which increase the opportunity cost of not working. According to most economists, women's comparative advantage in household activities explains the sex-based division of labor at home and at work. In this view, all household members are better off when women rationally avoid demanding jobs that are difficult to reconcile with household responsibilities. The earnings gap persists because women have less experience than men and tend not to invest in the kind of firm-specific skills or human capital that employers value.

England and Farkas find economists' explanations incomplete, in places misguided, and sometimes just plain wrong. However, instead of dismissing economic concepts, they put them to constructive use by combining them with insights from structural sociology. This work is likely to be considered heresy by true believers in both camps precisely because it transcends the limits of each. Central to its perspective is the concept of "implicit contracts," the notion that both parties to an exchange "can to some degree count on the performance of the other by observing what they have done in the past." England and Farkas see both household and employment relations in terms of such contracts established after a period of search (for example, for a spouse or for a job) in a market in which the terms of exchange are constrained by the structural positions of the parties. Structural location refers to the position an individual holds in hierarchies of occupations, organizations, and industries. England and Farkas cite a considerable body of research literature that demonstrates how structural position shapes and reinforces behaviors and values useful for survival in those positions and how those traits in turn sharply limit alternatives in otherwise rational choices individuals make regarding work and family.

The concept of "implicit contracts" is borrowed from economic models of the employment relationship. Economists invoke it to explain the existence of long-term attachments between employees and employers. Some jobs require idiosyncratic skills that are unique to a single employment setting and are acquired only after considerable on-the-job experience. In such settings, both employee and employer have a stake in a long-term relationship. The employee's job skills are of little value to other employers, and the employer finds it costly to replace a worker who quits before the returns to on-the-job training can be realized. Thus, employer and employee develop a shared understanding of commitment to the employment relationship based on mutual self-interest.

England and Farkas apply the same concept to marital relationships (and other intimate relationships). They seek to explain both the rising divorce rate and the fact that relationships do not end the moment one partner perceives that the costs outweigh the benefits. They argue that marriage is an implicit contract based on "relationship-specific investments." Sustaining a relationship requires the acquisition of behaviors, skills, and knowledge that are not immediately applicable to a relationship with a new partner. Since finding a new partner also involves financial, psychic, and opportunity costs, each party has an interest in living up to the terms of the implicit contract.

However, the rate at which marital relationships dissolve continues to rise. To account for this, England and Farkas analyze the power position that men and women bring to relationships. Drawing from sociological exchange theory, they argue that power is a function of the alternatives available to each party to the exchange. As the earnings capacity of women increases, the viability of sustaining a household without a spouse increases. Thus, even though social surveys show that levels of marital satisfaction appear to be increasing, the divorce rate increases as well because of better alternatives outside of marriage.

Nevertheless, women remain structurally disadvantaged within marriage for two reasons. First, while real wages for women have increased, wages relative to those received by men have changed little. Second, within a relationship, women tend to specialize in "emotional services," a set of skills that men are typically socialized not to value as highly and that often benefit the children more than they do the husband. Earnings capacity, the most important resource brought by the husband to the marriage, is more readily marketable outside the relationship as well. Thus, a power differential will persist so long as the sex-based division of labor outside the home reinforces and is reinforced by structural inequities in the workplace. One unfortunate result of this power differential is that when families with children end in divorce the economic well-being of the wife decreases while the husband's increases.

The notion of implicit contracts and structural constraints on rational choice are also used to explain gender inequalities at work. Neoclassical economists argue that women rationally avoid jobs in which earnings potential depreciates rapidly during time out of the labor force. They also avoid jobs requiring firm-specific training, where entry wages are low but grow over the course of long-term employment. Instead, women presumably maximize lifetime earnings by seeking jobs with higher starting wages, less wage growth, and little wage penalty for dropping out and re-entering the labor force. England and Farkas cite empirical research that undermines this explanation. The rate of wage depreciation during time out of the labor force is no higher in predominately male jobs than it is in predominately female jobs. Entry wages are higher, not lower, in male jobs. In fact, earnings in female jobs are lower at every level of age, education, and years of experience, so lifetime earnings maximization cannot explain occupational segregation by sex.

According to England and Farkas, both occupational segregation and earnings disparities are generated by the interdependence between structural barriers to employ-

ment and the (constrained) rational choices of individuals. Employers practice "statistical discrimination." In the absence of complete information on individual applicants, they make decisions based on their perceptions of group characteristics. Since employers perceive that, on average, women are more likely than men to leave the labor force, they avoid hiring women for jobs that provide training in firm-specific skills. Consequently, women are less likely to have access to jobs that provide employment security and other advantages of implicit contracts. Moreover, since women are aware of structural barriers like statistical discrimination, they rationally avoid investing in training for careers that are likely to be closed to them, thereby turning employers' perceptions into self-fulfilling prophecies.

England and Farkas also apply their perspective to marriage markets, fertility behavior, child-rearing practices, savings and consumption across the life-span, legal issues regarding sex discrimination and comparable worth, and related issues. Their arguments are thoroughly grounded in the latest research in demography, sociology, and economics, and they are usually careful to distinguish speculation from conclusions supported by empirical evidence. The book will be valuable to scholars of gender, work, and family, and it is written in a style that also makes recent theory and research on these issues easily accessible to a general audience.

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Projections Regarding Employment

The Future Impact of Automation on Workers. WASSILY LEONTIEF and FAYE DUCHIN. Oxford University Press, New York, 1986. xiv, 170 pp., illus. $24.95.

Charlie Chaplin's movie *Modern Times* (1936), about factory life in the age of mass production, reflects longstanding concern about the effects of automation on workers. An important aspect of this concern is workers' fears of displacement by new technology, and the computer revolution, which shows no signs of abating, has reinforced these fears. In an attempt to address the issue of displacement directly, Wassily Leontief and Faye Duchin, using the technique of dynamic input-output analysis, have presented projections of employment broken down by occupation through the year 2000 under alternative assumptions about the diffusion of innovation. They conclude that the production of projected output levels in the year 2000 will require 10 to 20 million fewer workers than production of the same output levels would have required in the absence of diffusion of new technology. However, they also conclude that output will grow sufficiently for the level of total employment to match closely the projected size of the labor force in the year 2000. Thus, at least with regard to total employment, fears of technology-induced displacement of workers are unfounded.

What these numbers mask is a fairly dramatic shift in the occupational composition of the required work force. Again according to projected output levels for the year 2000, up to eight million fewer managers and 15 million fewer clerical workers will be required, assuming reasonable rates of diffu-

sion of new technology, than would be required if there was no diffusion. This decrease is accompanied by an increase of up to 5.5 million in the number of professional workers due to the diffusion of new technology. Leontief and Duchin's analysis is aimed almost exclusively at determining total employment levels by occupation and not with whether the available work force will fit the predicted occupational demands. The latter issue is clearly at least as important as (and not independent of) the aggregate level of employment, but I will not consider it in this review.

Input-output analysis (IOA), for which Leontief won the 1973 Nobel Prize in Economic Science, has made a fundamental contribution to our understanding of how the U.S. economy operates. Essentially, IOA can be thought of as providing a recipe of inputs required for the production of the output of any single industry and, by extension, of any combination of industries. The basic tool of IOA is an input requirement matrix, whose ij^{th} element is the quantity of the output of the jth industry required to produce a unit of output of the ith industry. Through this matrix, IOA provides a compact representation of the set of relationships among all productive inputs (labor, raw materials, and so on), intermediate goods (outputs of one industry that are used as inputs in another industry), and final goods (outputs that are consumed for their own sake) in the economy. IOA has proven to be very valuable in understanding the relationships among industries and inputs and in projecting the requirements for predetermined expansion of various sectors of the economy.

An innovation of IOA that Leontief and Duchin introduce in the present study is called dynamic input-output analysis (DIOA). This technique links together the production requirements of successive years in order to account for the degree of investment in capital equipment required both to replace worn out and obsolete equipment and to enable the production of increased quantities of various goods. This technique is described informally in chapter 1 of the book, which also contains an overview of the entire analysis and the results. The technique is described in more detail in a very useful appendix.

There are two major sets of predictions that must be made in order to forecast future employment by industrial sector and occupation. The first regards the effects of technological advances on the elements of the input requirements matrix. Chapters 2 and 3 of the book are devoted to careful, detailed discussions and syntheses of existing work on the effects of computers on factory production and office production, respectively. In the factory, the innovations considered include computer-numeric control of machine tools and the uses of robots in mass production. In the office, the automation of such clerical tasks as typing, filing, and bookkeeping is considered. In addition, the effects of the microcomputer revolution on managerial productivity are considered. These discussions are convincing in their analysis of the medium-term potential of new computer technology in these settings. In terms of the DIOA, projected values for the input requirements matrix as it is likely to be affected by the new technology are derived.

The second set of required predictions regards the output level of each industrial sector. Leontief and Duchin use projected final output levels for 1990 derived by the U.S. Bureau of Labor Statistics (BLS), making an adjustment to take account of the outputs required to produce the capital goods implicit in the assumed new technology. These projects are then extrapolated to the year 2000. The BLS projections are based on forecasts of population trends as they relate to both the labor force and the consuming population, and they rely on historical relationships between these demographics and outputs. The assumed output levels are combined with the input requirements matrix in order to derive the overall demand for various types of labor in the years 1990 and 2000.

There are two important weaknesses in the analysis. The first, inherent in the input-output technique, is that it is assumed there is a fixed recipe for the production of any good. There is no scope for substitution of