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# THE EVOLUTION OF LABOR MARKET STRUCTURE: THE CALIFORNIA CANNING INDUSTRY

MARTIN BROWN and PETER PHILIPS\*

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This paper presents a historical explanation of the evolution of labor market structure and wage differentials in the California canning industry. Beginning in the late 1800s, the power of craft labor within the canneries combined with the growth of a canned goods market to stimulate mechanization, which in turn raised the cost of a casual labor force and led to nascent labor market structure. Unionization in the 1930s, itself a partial product of previous mechanization, reshaped and institutionalized informal internal labor markets. Wages both within the canneries and between canning and agriculture responded to the evolving institutions and structural characteristics of the cannery labor market.

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**T**WO factors that have often been identified as major causes of labor market structure are industrialization and unionization.<sup>1</sup> Typically, however, studies of this subject have dealt with the separate effects of these factors. This paper attempts a more integrated analysis through a historical case study of the interrelationships among industrialization, unionization, and the

evolution of labor market structure.<sup>2</sup> Specifically, we will examine the development of labor market structure in the California fruit and vegetable canning industry from the late 1800s through the late 1970s. We will look also at the relationship between

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<sup>1</sup>See for example, Lawrence M. Kahn, "Unions and Labor Market Segmentation" (Ph.D. dissertation, University of California at Berkeley, 1975) and Thomas Vietorisz and Bennet Harrison, "Labor Market Segmentation: Positive Feedback and Divergent Development," *American Economic Review*, Vol. 63, No. 2 (May 1973), pp. 366-76.

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<sup>2</sup>By industrialization in this context we mean the process by which: (1) markets expand geographically, in volume and through the proliferation of products; (2) work for wages grows both numerically and as a proportion of all work activity in society; (3) the division of labor is progressively refined, between products and within the production of a single product; (4) the process of production is mechanized and, along with the division of labor, necessitates the development of new methods of management, supervision, and engineering; (5) the scale of production increases, albeit unevenly, and along with the other factors listed, leads to the rise of the modern corporate enterprise. For a similar interpretation of industrialization, see Alfred D. Chandler, Jr., *The Visible Hand, The Managerial Revolution in American Business* (Cambridge: Harvard University Press, 1977). For a discussion of the effect of industrialization on union organization, see Lloyd Ulman, *The Rise of the National Trade Union* (Cambridge: Harvard University Press, 1955).

this labor market and the market for agricultural harvest labor in California.

We are concerned with how, in a particular industry, the processes of industrial development led to the emergence of labor market structure, and how customs and institutions, including unionism, helped to delineate and stabilize that structure. Finally, we will examine how the evolution of labor market structure altered the pattern of relative wages between industries.

### **California Agriculture: An Unstructured Labor Market**

Until the 1930s most jobs in the California canneries were unstructured, that is, at any given time almost anyone willing to work at the going wage could be hired into these jobs. The majority of cannery jobs were in seasonal preparation work and general floor labor, and the technology of canning at that time did not require a significant level of firm specific on-the-job training. Because turnover costs to the firm were therefore low, and also because of the large fluctuation in labor demand due to the uncertain and seasonal availability of the industry's raw material, employers had no incentive to reduce labor turnover. Also the low value of raw product per worker, the low value of capital per worker, and the related low level of technical integration allowed for the use of piece-rate wages, so workers with a broad range of unknown productivity characteristics could be hired.

This blind hiring, along with the large variability in labor demand, resulted in many cannery jobs being highly casual, offering employment only in short and unpredictable spells. Finally, in the absence of labor unions, there was no formal seniority system. Given these conditions, most cannery workers had few prospects for year-round job security or upward mobility. Division of labor existed, but it did not result in a hierarchy of skills, or jobs requiring a sequence of experience, or an internal mobility chain.<sup>3</sup>

<sup>3</sup>U.S. Immigration Commission, "Immigrant Labor in California Fruit and Vegetable Industries," *Immigrants in Industry*, part 25, chap. 10, (Washington: GPO, 1911), pp. 248–51. See also Martin Brown and Peter

In these results, the California canning labor market closely resembled Fisher's classic example of an unstructured labor market: the harvest labor market for seasonal farm workers in California, especially the market for those hired to work on crops, such as fruit and vegetables, that are highly perishable.<sup>4</sup> In addition to sharing institutional characteristics, the markets for canning labor and harvest labor were linked in other ways prior to the 1930s. As we will discern later, the wage levels in these two markets were similar and moved together over time. Many of the fruits and vegetables harvested by agricultural labor were then processed by canning labor, and there was substantial intraseasonal and interseasonal mobility by workers between the two markets. The tasks related to harvesting perishable crops and preparing them for processing were also similar. In short, prior to the 1930s, the markets for seasonal labor in canning and harvesting were closely related components of an overall unstructured segment of the California labor market.<sup>5</sup>

This relationship was apparently the perception of the market by contemporary labor organizations. Until the late 1930s, the efforts of California's agricultural unions were aimed at organizing cannery, packing shed, and harvest workers into a single jurisdiction, without distinguishing between the groups in terms of organizing strategy.<sup>6</sup>

To this general picture of unstructured work in the canning industry there were two exceptions. Structure existed in the sense that fairly early on a rather strict gender division of labor emerged in the cannery labor market; that is, most jobs were open and available to anyone coming along,

Philips, "Technical Change, Unionism and the Decline of the Piece-Rate Wage System in California Canning" (Working paper, Economics Department, University of Utah, June 1984).

<sup>4</sup>Lloyd Fisher, *The Harvest Market* (Cambridge: Harvard University Press, 1953).

<sup>5</sup>California Bureau of Labor Statistics, *Third Biennial Report, 1887–1888* (Sacramento: State Printing Office, 1888).

<sup>6</sup>For example, see Stuart Jamieson, *Labor Unionism in American Agriculture*, U.S. Department of Labor Bulletin No. 836 (Washington, D.C.: DOL, 1945), pp. 67–68.

provided he or she was the right sex for the job. In 1910 women accounted for about 65 percent of the employment in the California canning industry, but they were almost totally restricted to highly seasonal employment in the preparation and can-filling department in jobs that involved the hand preparation of raw products.<sup>7</sup> Gender segmentation was not totally complete in 1910, however, in that some men were still employed in "women's jobs."

The majority of men in cannery work in 1910, were employed in unskilled general labor, many of them in the receiving and warehousing departments, but unskilled men were also engaged in transporting the semiprocessed product between successive stages of production throughout the cannery. Like women's jobs, those held by unskilled men were highly seasonal and lacked a seniority structure.

A minority of men, however, were employed in craft jobs that were the exclusive sphere of male workers. In can-making and in the cookroom, there were a limited number of skilled occupations in which men held their jobs for extended periods of time. Apprenticeship systems and skill hierarchies existed in these jobs, which in 1910 accounted for about 5 percent of peak season cannery employment. In rare cases these craftsmen were unionized, and jobs were organizationally and technologically disconnected from the unstructured jobs in the industry. Thus, with the exception of a small number of craft jobs, the pre-World War I cannery labor market consisted of two unstructured segments divided by gender.<sup>7</sup>

For many ethnic groups of women, cannery work was halfway between non-market status and full-time wage work. The California canning industry maintained this seasonal labor force by continually recruiting women workers from the new immigrant groups as older workers moved on to less seasonal work commitments elsewhere. The loose tie of worker to canner, however, had its costs to the employer,

especially in the large urban canneries. These growing costs of an unstructured labor force derived from mechanization and an associated growth in fixed costs.

### Mechanization and the Structuring of a Casual Labor Market

Structured jobs with informal seniority arrangements for both men and women, and job ladders in men's work, emerged in the California canneries before the industry was unionized in the late 1930s. The primary sources of this structure were the growth of mechanization and the barriers to the optimal use of that mechanization caused by a loosely attached labor force. But from where did the stimulus for mechanization itself come?

### Mechanization

One stimulus was the potential bargaining power of the skilled cannery workers. From 1870 there had been several attempts at unionization in the canning industry that centered on the craft occupations.<sup>8</sup> Craft workers on the East Coast had gained substantial concessions as a result of threatened unionization, but those concessions were followed by the introduction of technical innovations designed, in large part, to weaken the power of craft occupations.<sup>9</sup> West Coast canners, while not facing as stiff a threat from craft unions, nonetheless exploited East Coast inventions once they were developed.<sup>10</sup> In any case, since craft

<sup>8</sup>Hugh S. Orem, "Baltimore, Master of the Art of Canning," in Arthur I. Judge, ed., *A History of the Canning Industry by Its Most Prominent Men* (Baltimore: *The Canning Trade*, 1914), pp. 8–11.

<sup>9</sup>For an account of craft labor and unionism in nineteenth century canning, see Martin Brown and Peter Phillips, "Focusing on the Binding Constraint: Craft Power and Mechanization in Nineteenth Century American Canning" (Working paper, Economics Department, University of Utah, January 1984).

<sup>10</sup>Craft unionism in nineteenth century California was weaker for two reasons. First, skilled cookroom workers in California were Chinese, and the Chinese at this time were anathema to the white California union movement. Second, most California crops were acidic and consequently required less skill for a safe cook. Martin Brown and Peter Phillips, "Competition, Racism, and Hiring Practices Among California Manufacturers: 1860–1882" (Working paper, Economics Department, University of Utah, January 1984).

<sup>7</sup>The information in this section is from California Bureau of Labor Statistics, *Fourteenth Biennial Report, 1909–1910* (Sacramento: State Printing Office, 1910), pp. 184, 283.

occupations in the canneries were exclusively male and not technologically integrated into women's preparation work, this first phase of mechanization rooted in deskilling craft labor did not change the piece-rate, hand-labor, or casual character of women's work.

The rapid growth in product demand just prior to and after World War I, and the consequent expansion in labor demand, stimulated a second phase of mechanization. Product demand expressed in terms of the physical output of the California canning industry doubled each decade from 1910 to 1930.<sup>11</sup> While labor demand in the California canning industry stagnated between 1900 and 1910, canning employment increased by 50 percent during the next four years. By 1927 it had tripled and accounted for over 10 percent of California's industrial work force.<sup>12</sup> The increase in product and derived labor demand stimulated an extension of mechanization from the craft occupations to women's work in preparation and led to the development of a canning capital goods industry in California.

Pressure to continue mechanization of women's work continued after the labor shortages of World War I for three reasons. First, with assembly-line production established in men's processing work, various technical savings could be generated by automating women's preparation work.<sup>13</sup> Second, the establishment of regulations limiting working hours and raising wages for women and children in the California canneries after 1916 reduced the advantages of a casual, non-mechanized labor force.<sup>14</sup> Third, the industrial union drives

during World War I and again in the early 1930s threatened to raise hand-labor wages and to reduce the managerial prerogatives so crucial to exploiting an unstructured labor supply. Hence, once begun, mechanization spread slowly but irreversibly throughout the cannery.

### Timing

A gender-based seasonality index is a useful measure of the timing of the introduction and diffusion of canning mechanization.<sup>15</sup> A decline in seasonality suggests, for two reasons, that machines had been introduced: the fixed costs associated with mechanization would induce cannery operators to extend the production season by packing more kinds of crops or crops drawn from different areas; and maintenance work on the machines would extend the season for mechanics beyond the actual production period. Further, a more rapid decline in the seasonality index for one gender than for the other suggests that mechanization was creating more machine operative and maintenance jobs for that sex, because the effort to spread fixed costs over a longer season would be concentrated in the work done with the machines themselves, and also because machine operatives

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Printing Office, 1917), p. 16 and p. 42; and Anderson-Barngrover *Canning Machinery Catalogue No. 20* (San Jose, California: Anderson-Barngrover Manufacturing Co., 1916), pp. 12–17.

<sup>15</sup>We have constructed seasonality indices by computing the ratio of employment for each gender in the peak season—June through November—over the annual employment for the gender. An index of .50 would indicate no seasonality of employment, and a maximum index of 1.00 would indicate extreme seasonality. Seasonality indices by gender and monthly employment data by gender for the California canning industry are available from the authors for 23 of the years during the period 1900–70.

The data sources for the monthly employment data used in constructing the seasonality indices were: *Census of Manufacturers*, Part III, "Special Reports on Selected Industries—Canning and Preserving," 1900, and Bulletin 61, 1905; California Bureau of Labor Statistics, *Labor Conditions in the Canning Industry* (Sacramento: State Printing Office, 1913); and California Bureau of Labor Statistics, *Seventeenth Biennial Report, 1916* and *Biennial Report(s)* for 1918, 1920, 1922, 1924; and California Department of Industrial Relations, Division of Labor Statistics and Research, *Estimated Number of Production and Related Workers in Manufacturing, California, 1939–1970* (Sacramento: State Printing Office, 1971).

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<sup>11</sup>*The Almanac of the Canning, Freezing, Preserving Industries* (Westminster, Maryland: Edward E. Judge and Sons, Inc., 1916 through 1974).

<sup>12</sup>U.S. Department of Commerce, Bureau of the Census, *Census of Manufactures, Industry Statistics for California* (Washington, D.C.: GPO, 1899, 1904, 1909, 1914, 1929).

<sup>13</sup>*A Complete Course in Canning*, 3rd ed. (Baltimore: *The Canning Trade*, 1914), pp. 18–22.

<sup>14</sup>Helen V. Bary, "Report of Effects of Commission's Rulings, Season of 1916," and Katherine P. Edson, "Report on Wages Board in the Fruit and Vegetable Canning Industry," in California, Industrial Welfare Commission (IWC), *The Regulation of the Fruit and Vegetable Canning Industry* (Sacramento: State

would more likely receive downtime and offseason work in jobs that were not essential to perform during active production, such as warehousing, labeling, and plant maintenance.<sup>16</sup>

Innovations during the 1900 to 1915 period included the lye-peach-peeler in preparation, the continuous cooker in processing, and the mechanical labeler in warehousing.<sup>17</sup> During that time, the seasonality index for women fell .95 to .85 while for men it dropped from .83 to .65. The index for men fell more sharply because most innovations were still located in the cookroom, where men held most jobs; in addition, off-season warehousing, in which men also held most of the jobs, was expanding with the growth in plant size and national markets. Furthermore, even when machines like the lye-peach-peeler and the mechanized labeler were introduced in women's work, the effect was to exclude women from these tasks and create operative jobs for men. The reason the index for women fell at all during this period was that increased fixed costs of mechanization began to squeeze out short-season canneries in rural areas and induce urban canners to extend their season. This change extended the hand-labor activities in preparation which were done by women.

<sup>16</sup>California Department of Employment, Employment Stabilization Commission, *Seasonal Workers in California*, Research Series Bulletin 21 (Sacramento: State Printing Office, 1947), p. 18; and California Unemployment Reserves Commission, *A Study of Seasonal Employment in California* (Sacramento: State Printing Office, 1937), p. 51.

<sup>17</sup>For cannery mechanization and its effects on seasonality and employment, see California Department of Employment, *A Study of Seasonal Employment in California* (Sacramento: State Printing Office, 1939), p. 51; California C.I.O. Council, Research Department, "Economic Material on California Cannery Industry" (Pamphlet in the Giannini Library, University of California at Berkeley, 1946), pp. II-B-1 to II-B-5; and U.S. Department of Labor, "Processed Foods: Canned Vegetables," Bureau of Labor Statistics Report No. 8, Case Study Data on Productivity and Factory Performance (Washington, D.C.: DOL, 1953); and James A. Steward, "Employment Trends in California's Canning and Preserving Industry, 1950-1961," report prepared for the Labor-Management Automation Committee, California Canning Industry, by the Automation Unit, Coastal Area Office of the Division of Public Employment and Benefits Payments, State of California (in the San Jose Public Library).

The men's index remained roughly constant after World War I, reflecting the earlier completion of mechanization in most men's jobs. For women, the index fell slowly to .80 in 1937, reflecting the beginning of line production in preparation. Between 1937 and 1960 women's seasonality came to match the men's index of .65 as mechanized peach pitting, tomato peeling, and pear coring were perfected. Hand labor was almost entirely eliminated by the mid-1950s as automated line production reached maturity in preparation tasks and linked up with the previously automated line in the cookroom.

### Economies of Scale

Mechanical innovation initially took place within specific canneries, but by 1900 the equipment required for mechanization could be purchased from the emerging cannery capital goods industry.<sup>18</sup> Thus, an industrial division of labor was made possible by the rapid expansion of the canning industry, the increased demand for capital goods created by the pressures to mechanize, and the emergence of multiplant corporate firms that provided a stable, long-term market for canning equipment.<sup>19</sup>

With the emergence of a capital goods industry for canning, both the small, single-product canneries in rural areas and the large, multiproduct canneries in the cities had access to new machinery on more

<sup>18</sup>Sprague Canning Machinery Company, *General Catalogue of Canning Machinery* (Chicago, 1904).

<sup>19</sup>The emergence of the corporate, multiplant, multiproduct firm in California canning was epitomized by the formation of the California Packing Corporation, better known as the Del Monte Corporation. This corporation was put together first in 1899 and enlarged in 1916, consisting finally of an agglomeration of 17 pre-existing canning and preserving companies, many the result of earlier mergers. At its formation, Del Monte accounted for 57 percent of all canning and preserving in California. This share fell over the years, but the industry remained moderately oligopolistic. In 1974, for example, eight firms accounted for 80 percent of the production in California canning and preserving. William Braznell, *California's Finest, The History of Del Monte Corporation and the Del Monte Brand* (San Francisco, 1982), p. 163; and *Alaniz v. California Processors, Inc.*, No. C-73-2153 WHO, (N.D. Cal. filed May 5, 1976); discovery proceedings provided by the law office of Gallardo and Hawes, attorneys for the Cannery Workers Committee, San Jose, California.

or less the same terms. But the multiproduct canneries enjoyed a distinct advantage over their single-product rivals in exploiting economies of scale once mechanization was implemented. With a longer production season, the multiproduct firm could run single pieces of capital equipment, such as the continuous cooker and the mechanical capper, for more months in a year. In addition, large canneries enjoyed economies of scale in the use of mechanized systems of production in preparation, such as belt transportation and large specially designed tables.<sup>20</sup>

The urban multiproduct canneries tended to have more workers per plant than rural canneries because they were designed to process a larger volume of product and because they had access to the more elastic supplies of the urban labor market.<sup>21</sup> After 1900 these advantages of urban location began to outweigh the advantage of rural canneries in being close to the source of the raw product. As a result, by World War I the California canning industry was becoming more urban, more corporate, less seasonal and more mechanized. These developments, in turn, contributed to the continuation and systematic extension of the mechanization process.

### Job Structuring

Mechanization in the context of an unstructured labor market had costs that were evident in the 1920s.<sup>22</sup> This was the period during which the first machines were being introduced in women's fruit-preparation work, such as the Duncan peach pitter, but when virtually all women cannery workers were still being paid on the piece-rate system. Three drawbacks to the piece-rate system under these conditions created particular difficulties: First, employers could not persuade the women

to arrive at work at a stated time or reliably accept overtime even with increases in their piece rate. Second, the continual introduction of machines created conflicts over the appropriate piece rate, especially when both machine- and hand-workers were doing the same task, such as pitting peaches. Third, piece rates required extensive checking to avoid pay disputes and maintain quality.

Irregular attendance, quality control, rate disputes, and output measurements are universal piece-rate problems. Machines compatible with piece-rate payments, such as the early pitters and peelers that were hand-fed, one-operator devices, however, raised the costs of irregular attendance and made rate disputes more frequent.<sup>23</sup> When these pitter and peeler machines became more complex in the 1930s and thereafter, the cost of measuring individual output grew. Thus, even prior to the advent of unionism in canning in the mid-1930s, the costs of an unstructured, piece-rate work force were rising.

In the earlier era, non-mechanized production had been compatible with an unstructured work force and wage payment by piece rate. But the rising costs of an unstructured work force, in the context of an increasingly mechanized production process, meant that unstructured women's jobs in canning had to go, and the piece-rate system went with them. For example in 1928 almost all women in the California canning industry worked under a piece-rate system; by 1937, however, 34 percent of the women in the rapidly mechanizing can-filling occupations were paid time rates, as were 15 percent of the women in the less mechanized preparation occupations.<sup>24</sup> The decline of the piece-rate system heralded the emergence of internal structuring for women's jobs prior to unionization.

Mechanization, which was the proximate cause of this structure, did not, however, evolve in isolation from other factors. The

<sup>20</sup>California IWC, *Regulation of the Canning Industry*, p. 124; Berger Carter Company, *General Catalogue*, Nos. B and C-18, (San Francisco: Sunset Publishing House, 1917), p. 52.

<sup>21</sup>California Bureau of Labor Statistics, *Labor Conditions in the Canning Industry* (Sacramento: State Printing Office, 1913), pp. 23, 28.

<sup>22</sup>Donald Anthony, "Labor Conditions in the Canning Industry of the Santa Clara Valley (Ph.D. dissertation, Stanford University, 1928).

<sup>23</sup>Elizabeth Nicholas, "Working in the California Canneries," *Harvest Quarterly*, September–December 1976, pp. 12–25.

<sup>24</sup>California National Youth Administration (NYA), *An Occupational Study of the Fruit and Vegetable Canning Industry in California* (1938 Pamphlet in Giannini Library, University of California at Berkeley), pp. 15–40.

Table 1. Structure of Jobs by Gender in California Canneries, 1937.

Department	Men		Women	
	Number of Job Categories	Number of Promotional Steps Above Entry Level Job	Number of Job Categories	Number of Promotional Steps Above Entry Level Job
Receiving	6	3	0	0
Preparation	3	2	5	2
Canning	7	3	6	2
Cookroom	8	4	0	0
Warehouse	7	3	0	0
Maintenance	3	2	0	0

Source: "An Occupational Study of the Fruit and Vegetable Canning Industry in California" National Youth Administration, State of California, 1938, p. 15-39. (For each job, the NYA study gives "Personnel Specifications," including "Sex: [Male or Female].") The study also contains several photographs that clearly show the gender segregation of occupations within the canneries. The NYA study was based on a survey of 26 canneries that employed 30 percent of the California cannery work force in 1937.)

urbanization of canning, the rise of corporate business organizations in California canning, the lengthening of the production season, and increasing plant scale all contributed to the rapid pace of mechanization.

Mechanization had been focused first on men's craft jobs, such as cooking and capping. By the 1920s those jobs were no longer being done as before by one craftsman with perhaps a helper, but at least in the larger plants they were divided among a number of workers with varying degrees of skill. Job ladders based on this hierarchy of skills became well established in men's work by the 1930s. Table I shows, for example, the highly developed structure of job ladders for men and the absence of such ladders for women in California canning in 1937.

With the exception of "floorlady" (that is, supervisor of women workers in preparation departments), all women's jobs were seasonal and filled from outside the plant; none had promotional possibilities except to floorlady.<sup>25</sup> Despite some mechanization of women's tasks, such as conveyor belt

sorting and mechanized peachpitting, most women's work remained on piece rates until just prior to unionization in 1937. Higher capital costs, however, had led to regularizing work both through the season and on a daily basis, and as a result, children and the attendant in-plant childcare activities of women workers had been almost entirely eliminated from the cannery floor by the 1920s.<sup>26</sup> Since women were required to be at work on a regular basis and on time, hiring policies were developed to increase the attachment of women with acceptable work habits to particular local plants. Thus, a certain informal seniority system existed in women's work prior to unionization in response to higher capital costs.<sup>27</sup> This seniority system was designed by employers to measure reliability and avoid childcare problems.<sup>28</sup> Informal seniority, however, did not result in women's promotional job ladders at this time.

By 1937 men's work compared to women's reflected its more mature technology in a more clearly defined hierarchy of skills,

<sup>25</sup>All the promotional steps for women above entry level jobs shown in Table I refer to promotion to floorlady or head floorlady. These women supervisors received substantially lower wages than men in comparable jobs and did not have access, as did men, to additional promotional opportunities or year-round work (NYA, "An Occupational Study," p. 22). In 1937 the proportion of women's cannery employment accounted for by jobs above entry level was only 5 percent. For men the proportion of employment accounted for by jobs above entry level was 50 percent.

<sup>26</sup>U.S. Bureau of the Census, *Fourteenth Census, 1920, State Compendium, California* (Washington, D.C.: GPO, 1923).

<sup>27</sup>Elizabeth Nicholas, Cannery Worker and Labor Organizer in the 1920s and 1930s, interview, 7 July 1978.

<sup>28</sup>On cannery employer attitudes towards child labor and informal seniority, see California IWC, *Regulation of the Canning Industry*, p. 67; and Randall Tewley, "A Study of Personnel Problems in the Cannery," *Western Canner and Packer*, January 1938, pp. 39-41.



although some of these skills were not particularly complex. An apprenticeship hierarchy in men's craft jobs had existed from the beginning, but these skill-hierarchical job ladders were extended with the expansion of mechanization even as the percentage of men in the labor force rose. Men's job ladders, however, were somewhat more complex than the skill differences on which they rested.<sup>29</sup> Their complexity may have been due in part to promotional strategies geared to engendering the loyalty of men to the company.

Thus, mechanization, itself the result of a variety of forces associated with industrial development, had eliminated the unstructured character of men's cannery work by the 1930s. Mechanization had also made it more costly by then to use an unstructured female work force, but owners were reluctant to completely structure the labor market for women. As long as seasonality existed and interconnected mechanization remained incomplete, the owners sought to bifurcate their work force into regular and casual components. More specifically, men's jobs, primarily in receiving, cooking, warehousing, and maintenance, had become increasingly structured whereas women's jobs, almost entirely in preparation and canning, remained for the most part unstructured.

Meanwhile, mechanization was also having the effect of making canning less like agriculture and more like a manufacturing industry, a change that brought canning under the auspices of the 1935 Wagner Act and opened the way for its unionization. The kind of union that succeeded in organizing the industry would help determine how employers adapted to continuing mechanization and whether the cannery labor force would continue to be divided into structured and unstructured components.

### **Unionization and the Institutionalization of Structure**

For cannery workers, one of three union forms was possible: a craft union covering men's skilled work and annual warehousing

work; an industrial union including all cannery workers, men and women; or a cross-market union including both harvest and seasonal cannery workers. The impact of each of these union forms on the emerging structure of the cannery labor market would be considerably different. Craft unionism would probably reinforce male-female segmentation within the canneries by organizing the workers with well-developed job ladders, mostly men, and ignoring the seasonal workers, mostly women. Industrial unionism would institutionalize the emerging division between cannery work and unstructured labor markets, especially that in agriculture, but it would be less likely to formalize the rift between craft and seasonal workers within the canneries. Cross-market unionism would run counter to the structuring trends in canning that at that time were dividing it from the less structured farm labor markets.

### **Industrial Union with a Craft Heritage**

Attempts to jointly organize cannery and harvest labor in 1917 and 1931 had been short-lived.<sup>30</sup> Nevertheless, the cannery owners believed unionism to be quite likely after the Wagner Act and within the political and economic context of the mid-Depression era. In anticipation of further union drives, the owners in California formed the California Packers and Growers (CPG) for the purpose of engaging in industry-wide bargaining. Furthermore, they sought accommodation with "responsible union" elements, such as the AFL, to avoid dealing with more radical unions in the CIO, particularly Harry Bridges' International Longshoremen's and Warehousemen's Union (ILWU). The employers wanted to deal with a statewide industrial

<sup>30</sup>Kenneth Cameron, "Association Bargaining in the California Canning Industry" (M.A. dissertation, University of California at Berkeley, 1949), pp. 35-44; Jaclyn Greenberg, "Organizing the Great Cannery Strike of 1917," *Harvest Quarterly*, September-December 1976, pp. 6-11; Marjorie Howell, "California Cannery Unions" (M.A. dissertation, Stanford University, 1946); and Robert Knight, *Industrial Relations in the San Francisco Bay Area, 1900-1918* (Berkeley: University of California Press, 1960).

<sup>29</sup>NYA, "An Occupational Study," pp. 4-9.

union, including all cannery workers but not agricultural workers, in order to avoid whipsawing between craft unions that might otherwise balkanize the representation of occupational groups within the cannery industry, to foreclose jurisdictional disputes, and to eliminate wage costs as a factor in cross-firm competition.<sup>31</sup>

Once the decision was made to accept organization of an industrial form, the choice between the ILWU and the AFL was clear. Apart from the former's radical rhetoric, the CPG had reason to be antipathetic to the ILWU because it preached and practiced a relatively egalitarian wage policy.<sup>32</sup> The AFL, on the other hand, could be counted on to respect the historical and customary wage differentials between the craftsmen and the seasonal workers in the canning industry. Any attachment of the cannery operators to pre-existing job ladder strategies as reflected in existing internal wage structures would be threatened less by AFL craft traditions than by the new, radical, and more egalitarian ethos of the CIO and the ILWU.<sup>33</sup>

In 1937 the CPG sought to persuade the Teamsters to form an industrial union in canning. The CPG was particularly anxious, at this time, to find an AFL-affiliated alternative to the ILWU, which was making significant progress in organizing the canning industry through well-focused strikes designed to achieve union recognition on a plant-by-plant basis. The Teamsters rejected the CPG offer. In response, the

CPG agreed to recognize, without benefit of NLRB elections, several nationally chartered AFL locals, called federal locals, known collectively as the Cannery Workers Union (CWU).

In 1945 and 1946 the CIO, in the form of the Food Tobacco and Agricultural Workers Union (FTA), sought recognition rights from the NLRB. By this time the Teamsters saw a potential CIO alliance between the FTA and the ILWU as a serious threat to the expanding Teamster warehousing, trucking, and retailing jurisdiction. The CWU was also a problem for the AFL because the federal locals were difficult to administer from the national office and were susceptible to take-overs by local dissidents. For these reasons, in 1945 the AFL dissolved the CWU and turned the federal cannery locals over to the Teamsters. The Teamsters also received veiled support from the cannery operators, in return for organizing on a statewide and industrial basis, and in 1946 they gained NLRB recognition as the bargaining representatives of California cannery workers.<sup>34</sup> Thus, from 1937 to the present, California canneries have been organized on an industrial basis by relatively conservative unions that did not contest the internal status quo regarding relative wages and job ladders.<sup>35</sup>

### Effects on Market Structures

Institutionalization of labor market structure through unionization does more than cement the status quo. Depending on the kind of union involved—craft, industrial, or cross-market—a nascent labor market structure rooted in mechanization and custom can be pushed one way or another. In canning, at least three effects resulted from establishing an industrial jurisdiction within the Teamsters, a union

<sup>31</sup>Corinne L. Gilb, "J. Paul St. Sure, Some Comments on Employer Organizations and Collective Bargaining in Northern California Since 1934" (Berkeley: Oral History Project, Institute of Industrial Relations, 1957), pp. 114, 117 and 142. St. Sure was the attorney for the CPG, the organization that represented the canning industry in labor matters.

<sup>32</sup>Martin Brown and Peter Philips, "Union Policy and Market Forces in the Determination of Internal Wage Structures: A Case Study of the ILWU and Teamsters Union" (Working paper, Economics Department, University of Utah, June 1984).

<sup>33</sup>According to Einar Mohn, who was the Teamster organizer for the cannery unions in the 1940s, "you had to adopt the industrial type organization and still give recognition to some rather wide ranges and skills and classifications. . ." quoted by Corinne L. Gilb, "Einar Mohn Teamster Leader" (Berkeley: Oral History Project, Institute of Industrial Relations, 1970), p. 388.

<sup>34</sup>For union rivalry in California canning between 1930 and 1950, see Cameron, *Association Bargaining*, p. 159. Also Gilb, "J. Paul St. Sure," pp. 163–72 and 205–49; and Howell, *California Cannery Unions*, pp. 16–57.

<sup>35</sup>As Cameron put it, "The industrial union movement had touched and passed the cannery workers by eight years before. Now it came to them again in a strange guise, that of the traditionally 'craft' Teamsters." (Cameron, *Association Bargaining*, p. 200).

with a craft tradition. First, the cannery labor market became unionized while the harvest labor market remained nonunionized for another 35 years. The reasons for this result, and for the eventual defeat of the cross-market union strategy of organizing all agricultural workers under one union, are many. They include the exemption of agriculture from the Wagner Act, the bracero program, and the climate of anticommunism that prevailed in the late 1940s and worked to the detriment of the FTA.<sup>36</sup> Even independent of political factors, however, the process of structural dichotomization between the cannery labor market and the harvest labor market, a process that reflected the different rates of industrial development between these two branches of production, made success for the cross-market union strategy in agriculture highly improbable.<sup>37</sup>

The second effect of instituting an industrial union in the canneries was long-run in nature. The incorporation of women and other seasonal workers in the cannery union jurisdiction eventually aided in two ways the process of consolidating craft and seasonal workers into a single internal labor market. Under pressure from the left during the jurisdictional rivalry of the 1930s and 1940s, the established AFL-Teamster cannery union did push for and obtain substantial restrictions on the flexibility with which management could set piece rates.<sup>38</sup> This result accelerated the trend toward hourly wage rates for women and other

seasonal workers and speeded the process of the mechanization of women's jobs from the late 1930s on. Starting in 1939, the cannery union was also instrumental in obtaining unemployment insurance coverage for cannery workers, which increased their interyear attachment to the cannery labor market and reduced their inclination to seek off-season employment.<sup>39</sup> Thus, union discouragement of piece rates and encouragement of worker attachment reduced the attitudinal distinctions between annual and seasonal workers and, at the same time, made institutional rights within the internal labor market more uniform.

The third effect of industrial unionization was short-run in nature. The craft-oriented policies of the AFL-Teamsters reinforced the pre-existing limitations on the promotional opportunities of women and other seasonal cannery workers. Women continued to be restricted to low-wage traditional women's work and excluded from promotional job ladders. Seasonal men, while theoretically involved in job-ladder promotions, found the queues to higher-paid annual work long and restrictive. The annual workers, on the other hand, found their promotional possibilities protected from the outside and, under union pressure, enhanced through widening wage differentials.

### Initial Wage Rigidity

Between 1937 and 1972 the effect of the cannery collective bargaining agreements in the cannery industry was to formalize and reinforce the internal wage structure

<sup>36</sup>See Gilb, "J. Paul St. Sure," pp. 237-40.

<sup>37</sup>For instance, mechanization of harvest labor lagged far behind mechanization in the canneries, although the job content of harvesting perishable crops and preparing those same crops for canning is similar. Mechanization of this process in the canneries started in the 1930s and was complete by the 1960s. By contrast, harvest mechanization of perishable crops did not start until the 1960s, and the development and diffusion of this technology has been slower than expected. In 1975 the only perishable crop in which harvest work was totally mechanized in California was "canning" tomatoes. See Alan Costa and Manuel Hernandez, "Effect of Mechanical Harvesting Technology on Farm Employment for 10 Selected Crops in California" (California Legislature, Assembly Office of Research, Sacramento, December 1977), Table 1, p. 6.

<sup>38</sup>For a detailed account of these restrictions, see Brown and Philips, "Technical Change."

<sup>39</sup>California Employment Development Department, "Final Report, Taxable and Total Wages, Unemployment Insurance Benefits Paid and Employer Contributions Earned, by Industry, Ten-Year Averages, 1965-1974," Report 352 (Sacramento: State Printing Office, 1976). For seasonal cannery workers to be eligible for unemployment insurance, their work had to be defined as "industrial" rather than "agricultural." That this ruling was not considered a foregone conclusion is significant, suggesting that coverage of the California canning industry under the NLRA was not inevitable but was instead a function of the level of industrial development in canning and the institutional pressure by labor unions. See California State Advisory Council, "Analysis of the Probable Effects of Defining Agricultural Labor" (Agricultural Labor File, Giannini Foundation Library of Agricultural Economics, 1941).

that existed prior to unionization. Stratification of the job structure for men was preserved and extended by increasing the number of defined job classifications and widening wage differentials. In 1940, five formal job classifications were established for men's jobs; after 1967, this number was increased to eight and a system of proportional wage differentials was maintained across the structure.

Between 1940 and 1949 the Teamsters cannery union (and its AFL predecessor) faced recurrent jurisdictional challenges from unions and dissident factions with strongly egalitarian wage policies. After 1949 the Teamsters' cannery jurisdiction was secure, although a fierce jurisdictional rivalry between the Teamsters and the ILWU continued in northern California warehousing until 1958.<sup>40</sup> Between 1940 and 1958 the ratio of the highest to lowest men's cannery wage decreased somewhat, from 1.43 to 1.34, but from 1958 to 1972, with the Teamsters cannery union completely free of jurisdictional rivals, this ratio increased to 1.56.

Until 1961 nearly all the women workers in the canneries were restricted to a single job classification, literally defined as the "women's" classification in the collective bargaining contract. There were two exceptions. First, between 1956 and 1961 as women's preparation work was automated, women working with newly introduced machines received a ten-cent differential. Second, floorladies received a wage rate above that of the women line workers they supervised. Further, a constant differential in real terms was maintained between the lowest men's wage rate and the women's wage rate, and the floorladies' wage rate was kept just below the lowest men's rate.

Then, between 1961 and 1966 women's jobs were defined by a system of five separate job classifications. But, unlike the wage structure covering men's jobs, which maintained proportional differentials from year to year, the women's wage structure main-

tained only absolute differentials between jobs.

In 1967 women's job classifications were formally merged with men's and as a result women's differentials widened slightly. Nevertheless, the differential between the wage rate of floorladies and that of the lowest paid women cannery workers was only 12 percent in 1972, actually lower than the 27 percent it had been in 1940. In contrast, in 1972 the highest paid man in production work made 56 percent more than the entering male cannery worker, and the lowest-level male supervisor was paid 17 percent more than floorladies and 22 percent more than the lowest paid male worker.<sup>41</sup> Thus, between 1937 and 1972, men's wages in the California canning industry were spread over an ever widening range, while women's wages were confined to a narrow range below the lowest wage rate for men.

Unionization, and the threat of unionization, help to explain why the degree of job and wage stratification for male workers was greater than would seem justified by the skill hierarchy alone. As a result of gender segmentation, men were concentrated in the jobs that provided the greatest possibility, both organizational and technical, for disrupting the production process. Year-round craftsmen also had much better social and political connections to potential union organizations than did other workers. For these reasons, even the more radical and egalitarian unions viewed male cannery workers as their first and most important organizing target.<sup>42</sup> Then, once the California canning industry was orga-

<sup>41</sup>The data on job classifications and wage differentials are from collective bargaining contracts between California Processors and Growers (California Processors, Inc., after 1967) and the State Council of Cannery Unions, 1937-1972.

<sup>42</sup>Harvey Schwartz, *The March Inland* (Los Angeles: Institute of Industrial Relations, UCLA, 1978). The average wage in the cannery warehouses tracked closely the average wage in warehouses outside the canneries organized by either the ILWU or the Teamsters. This relationship reflects the combined impact of market forces and orbits of coercive comparison across unions. Unlike wages in the canneries, however, women's wages in the ILWU warehouses closely approached men's wages, reflecting a different union policy. See also Brown and Philips, "Union Policy and Market Forces."

<sup>40</sup>"ILWU-Teamster Unity Brings Warehousemen 'Real Victory,'" *ILWU Dispatcher*, July 4, 1958, pp. 1, 5.

nized, male craft and warehouse workers succeeded in politically dominating the union, especially prior to the 1970s.<sup>43</sup> It is therefore reasonable to assume that unionization was a major cause of the proliferation of job classifications and wage differentials beyond those indicated by the skill hierarchy.<sup>44</sup>

In summary, the institution of an industrial union with a sensitivity to the concerns of craft workers had both lasting and short-run effects. Because industrial unionism coincided with other factors dividing cannery from agricultural labor, unionization cemented the segmentation of these workers into two markets. In the short-run, the political power of male craft workers, combined with the conservative traditions of the Teamsters, reinforced internal gender divisions and internal proportional wage differentials. In the long run, however, the

joining of men and women and annual and seasonal workers into one jurisdiction facilitated the lessening of internal differences.

### Market Structuring and Its Effects on Wages

Between 1937 and 1967 women's jobs were fully mechanized; piece-rate payment was eliminated; women's and men's jobs became more technically integrated; women's jobs became less seasonal; and equal pay, equal employment opportunity laws were passed. All these factors put pressure on the internal job segmentation that emerged prior to unionization and was frozen into place by subsequent collective bargaining agreements. Despite the craft traditions and policies of the Teamsters, the industrial form of the cannery union facilitated acquiescence to the technical and legal pressure pushing toward internal homogenization.

These pressures were coming to a head in the late 1960s.

### Internal Wage Structures

In 1967, in response to the requirements of the Civil Rights Act of 1964, all jobs in the California canneries were classified formally under a single, consolidated system, consisting of thirteen job classifications. In reality, however, women remained effectively restricted to jobs in the bottom five classifications that continued to pay less than the lowest-paid men's job. In fact, the lowest women's wage rate actually declined slightly relative to the average wage rate from 1967 to 1972.<sup>45</sup>

The Equal Employment Opportunity Act of 1972 and affirmative action litigation based on it prompted a merger in 1973 of the women's job classification with the lowest men's classification in a new consolidated system that consisted of five major job classifications.<sup>46</sup> In addition, the floor-

<sup>43</sup>Jaime Gallardo, attorney for the Cannery Workers Committee, interview, 23 August 1978.

<sup>44</sup>How male craftworkers benefited from the proliferation of job classifications can be seen by the following illustration. Over the entire period 1937 to 1972, the middle men's wage bracket was maintained about 25 percent above the average women's wage. Until 1940 almost all men received this same premium although a small percentage of skilled men received additional premiums on an individual basis at the discretion of management. After the institutionalization of the formal job classification system for men, male workers in the higher brackets with premiums as much as 60 percent were administratively guaranteed higher wages, while men in the lower brackets received lower premiums (typically 15 percent). After 1940 a growing proportion of men entered these high-bracket jobs, in part because seniority led to employment in such jobs. Thus, experienced men especially benefited relative to experienced women, who were denied access to the male seniority ladder.

In addition, high-bracket jobs were held by experienced and skilled annual male workers, primarily of Southern European descent, while low bracket jobs were held by less experienced, seasonal, and disproportionately Latino men. The former group of men could be expected to and did play the most active political role in the cannery union, especially because union bylaws made it difficult for seasonal workers to vote or hold union office. See *Dionicio Acuna v. California Processors, Inc.*, Equal Employment Opportunity Commission, Case No. YSF3-064 (Washington, D.C.: 1972), pp. 7-12.

Monopsonistic wage discrimination models suggest some reasons the employers may not have objected to the male domination within the cannery union. See Michael Reich, *Racial Inequality* (Princeton: Princeton University Press, 1981), pp. 204-15.

<sup>45</sup>*Acuna v. CPI*, p. 14.

<sup>46</sup>At this time, not only were the Teamsters cannery union and the California canning industry employers codefendants in a class-action suit alleging employment discrimination against women and minority cannery workers, but the established cannery union leadership also was being challenged by Latino rank-and-file groups who were receiving covert and overt

ladies' classification was merged with the classification for low-level male supervisors. The distribution of men and women across job classifications in 1973, however, reflected the previous maintenance of gender segmentation. Almost 90 percent of women cannery workers were in the lowest classification; most of the remaining women were floorladies. Men were more evenly distributed across the five job classifications, with only about 20 percent in the lowest classification and about 50 percent in the top three job classifications in which only about 7 percent of all women were employed.<sup>47</sup> These distributions reflected the continued existence of internal job ladders for men and their absence for women.

The main reason the consolidated job classification system introduced in 1967 had no substantial effect on gender segmentation was that a dual seniority system was retained. Predominantly women seasonal workers and predominantly men year-round workers were separated by mutually exclusive seniority lists. This meant that even though a system of internal job bidding had been instituted for all jobs in 1967, women had no practical access to jobs on the "men's" job ladder.<sup>48</sup>

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support from the United Farm Workers Union (interview with J. Anthony Gaenslen, attorney with California Rural Legal Assistance, San Jose, 23 August 1978). Before the 1973–76 collective bargaining agreement was signed, the California canning industry experienced its first strike since 1953. Richard Benevento, head of the San Jose local, was quoted as saying that one of the chief issues involved in the strike was "equal pay for women" (*San Jose Mercury*, July 20, 1973). Another Teamster source was quoted as saying that the purpose of the strike was to "prove that the Teamsters are not a 'sweet-heart' union" and a UFW official replied, "These strikes could be part of a public relations gambit . . . by the Teamsters" (*Los Angeles Times*, July 20, 1973). Pressure from the more radical UFW and from cannery rank-and-file groups after the late 1960s was similar to the CIO pressure of the 1930s and 1940s. Both times the Teamsters responded by seeking reductions in worker distinctions within the canneries. Mike Elorday, secretary-treasurer of the State Cannery Worker Council in 1973, confirms that these pressures influenced the 1973 contract (interview with Mike Elorday, Sacramento, 18 December 1978).

<sup>47</sup>*Alaniz v. CPI*, discovery proceedings, 1976.

<sup>48</sup>*Acuna v. CPI*, p. 14.

The revision of the job classification system in 1973, on the other hand, was accompanied by a consolidation of the seniority system that, at least in principle, opened the previously exclusive men's job structure to women. Although women are still highly under-represented in higher level jobs, they have made some gains since 1973. For example, the percentage of women employed in the top three job brackets approximately doubled between 1973 and 1978. Still, in 1978 the percentage of women employed in the top two job brackets was only about one-quarter their percentage representation in the canning industry work force.<sup>49</sup> Nonetheless, this internal rechanneling of labor, connecting women to the same job structure and seniority system that covers men, has given women cannery workers greater access to pension and health plans, grievance procedures, and even to union governance.<sup>50</sup>

These changes in the internal labor market structure may appear simply to reflect the legal climate of the late 1960s and thereafter, but the legal actions that resulted in these rechanneled internal labor flows by gender could not have been initiated in the absence of previous technical and organizational developments. Until the mechanization of productionline work in women's preparation was completed in the 1950s and women's work was technically integrated with the rest of the cannery, the viability of linking men's job ladders to women's work was limited by the logic of skill progression and by the customary notion of appropriate promotional schemes.

Additionally, not only did the litigation efforts that were instrumental in eroding segmentation originate, in large part, in union rank-and-file organizations,<sup>51</sup> but also the legal basis of those actions revolved, in part, around the presumption that men and women were employed in the same occupational structure. This presumption would

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<sup>49</sup>Cannery Industry Affirmative Action Trust, *Status Report* (San Francisco: September, 1979), pp. 4, 5.

<sup>50</sup>*Alaniz v. CPI*, pp. 720–43.

<sup>51</sup>*Alaniz v. CPI*, p. 740.

have been more tenuous if men's jobs had been included in a unionized craft jurisdiction and women's jobs had not.

Furthermore, the effects of the evolution of the internal labor market culminated in crucial changes in the expectations and potential options of women workers on the bottom rung. Because from the beginning the cannery union restricted the use of piece rates, the mechanization in women's work was accelerated, leading to reductions in the technical, seasonal, and pay system distinctions between women's and men's jobs. These developments, along with the inclusion of men and women in the same bargaining unit, made the legal challenge against separate seniority lists and gender-divided job ladders more viable. Finally, the partially successful legal challenges to the existing structure of the internal labor market reshaped the expectations and options of internal labor supplies. Thus, while the developing structure in the cannery labor market increased the likelihood of successful unionization, the particular type of union influenced the form and timing of that structuring process.

The internal structure of cannery wage rates reflected the internal pattern of labor flows. Initially, union policy reinforced the internal immobility of seasonal and women workers. Nevertheless, between 1938 and 1948, the average earnings of women cannery workers improved relative to those of men because of the elimination of the piece-rate system for women and the imposition of a minimum hourly rate higher than their average piece-rate earnings. Between 1948 and 1972, however, women fell behind because proportionately more men moved into higher bracket jobs while women continued to be confined to a narrow range of wages at the bottom of the job structure.

Subsequent to the reforms of 1973, women were the relative winners. After the seniority system was consolidated in 1973, the differential between the middle (formerly men's) wage bracket and the lowest (formerly women's) wage bracket decreased from 25 percent in 1972 to 16 percent in 1978. Women did somewhat better than these data indicate because, along with a decrease in wage differentials, a small

minority of women moved up job ladders into jobs previously held only by men.<sup>52</sup>

### External Wage Structure

Average cannery and farm labor wages were closely correlated until unionization institutionalized the emerging structure in canning. Table 2 shows average weekly earnings for cannery and farm workers as a percentage of the average weekly earnings for all California industrial workers.

Between 1920 and World War II, cannery and farm wages tended to move

*Table 2. Average Weekly Earnings of Cannery and Farm Workers As A Percentage of Average Weekly Earnings of All California Industrial Workers.*

<i>Year</i> (1)	<i>Cannery Workers</i> (2)	<i>Farm Workers</i> (3)
1920	77%	80%
1925	67	70
1930	62	70
1935	58	56
1940	67	58
1945	70	77
1950	83	66
1955	80	66
1960	83	65
1965	80	63
1970	82	71
1974	91	61

*Source:* Various publications of the California Department of Industrial Relations and the U.S. Department of Agriculture (detailed citations supplied on request). Also, Varden Fuller, "The Supply of Agricultural Labor as a Factor in the Evolution of Farm Organization in California," in U.S. Congress, Senate, Committee on Education and Labor, *Violations of Free Speech and Rights of Labor: Hearings before a Subcommittee*, 76th Cong., 3rd sess, Part 54, *Agricultural Labor in California* (Washington, D.C.: 1940), p. 19890.

<sup>52</sup>Data on earnings, wage rates, and employment are from: U.S. Department of Labor, *Application of Labor Legislation to the Fruit and Vegetable Canning Industry*, Bulletin No. 176 (Washington, D.C.: GPO, 1940), p. 101; NYA, "An Occupational Study"; Collective bargaining contracts Council of Cannery Workers and California Processors, Inc., 1948-1978; Cannery Industry Affirmative Action, *Status Report*.

together. They both also rose relative to the average industrial weekly wage in California at the onset of World War II, although farm wages rose much faster. For the 1930 to 1945 period as a whole, calculations based on year-by-year data (not shown in Table 2) show that the difference between the average weekly wage of farm workers and that of cannery workers in California was not statistically significant at the 5 percent level.

After 1945, farm workers lost much of their wartime gains relative to industrial workers but cannery workers improved on their wartime gains. During the period 1945–74 in California, cannery weekly wages averaged 83 percent of the industrial weekly wage whereas farm wages averaged only 67.5 percent of the industrial average. Most of the large relative gain in cannery wages and the small gain in farm labor wages can be dated to the war years; there were only minor variations in relative position thereafter. (The hypothesis that the postwar farm and the cannery wage averages are insignificantly different is rejected at a 1 percent confidence level.) Relative farm wages fell after 1945 because the harvest labor market remained unstructured and exposed to new labor supplies. Cannery wages remained relatively high due to the institutionalized protection provided by the union and the internal labor market of the canning industry.

### Conclusion

The justification for this case study of the canning industry has been to serve as a vehicle for the exploration of the meaning and implications of John Dunlop's dictum: "in the long run . . . the wage structure is a reflex of the pattern and speed of industrialization."<sup>53</sup>

We find it useful to think of labor market transformation as an aspect of the ongoing process of labor market evolution rather than as an isolated, discrete event. This perspective is generated by starting labor

market analysis from a historical rather than a static analytical perspective. In this particular case study, the components of the process of industrial development were examined to see how they led to the institutionalization of labor market structure. The key link was found in the rising costs to employers of the canning industry's unstructured labor market prior to the 1930s. In an unstructured labor market where production was being mechanized, informal relations between worker and employer became increasingly costly. Nascent structure rooted in mechanization, longer production seasons, larger plant size, and the advent of corporate organization modified existing customs and institutions such as informal seniority, piece-rate payment systems, and the gender composition of the labor force. These changes imposed additional costs on any remaining form of unstructured labor relations, which in turn accelerated the process of mechanization that then undercut earlier forms of structure.

A subsidiary implication of this historical approach is that studies that attempt to explain labor market transformation primarily in terms of proximate institutional changes, such as unionization, may be incomplete. They may miss the historical antecedents to both unionization and labor market transformation and they may view the universe of possible causal agents too narrowly.<sup>54</sup>

In our historical approach, we also suggest a redefinition of labor market structure itself. Rather than viewing such structure as being determined by static and impervious barriers to worker mobility, our perspective defines labor market structure in terms of asymmetric labor flows and differential patterns of worker expectations and options. We see particular transformations, such as unionization or EEOC reforms, as crucial discrete events in the

<sup>53</sup>John T. Dunlop, "The Task of Contemporary Wage Theory," in J. T. Dunlop, ed., *The Theory of Wage Determination* (London: MacMillan and Company, Ltd., 1957), p. 27.

<sup>54</sup>For examples of studies that take this approach, see Christine E. Bishop, "Hospitals: From Secondary to Primary Labor Management," *Industrial Relations*, Vol. 15, No. 1 (February 1977), pp. 26–34; and Brian Becker, "Hospital Unionism and Employment Stability," *Industrial Relations*, Vol. 17, No. 1 (February 1978), pp. 96–101.



longer run process of structural evolution within labor markets. Such transformations are marked by a rechanneling of labor flows and the creation of new patterns of worker outlooks. At the time of such transformations, one should expect changes in the structure of relative wages because each market transformation implies a rechanneling of the pressure of labor flows on wages. Each transformation, however, should be pocketed within the broader his-

torical process of industrialization that caused it.

This case study has focused on the role of industrial development in determining the evolution of labor market structure in a single industry. A more complete approach would require a multi-industry analysis and a better understanding of the relationship between industrial development and social distinctions such as gender and ethnicity.