

Venus Green. *Race on the Line: Gender, Labor and Technology in the Bell System, 1880-1980.* Durham and London: Duke University Press, 2001. xv + 370 \$59.95 (cloth), \$19.95, paper, ISBN 978-0-8223-2554-3.



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Phone Contacts and Contracts: Technology and Work in the US Phone Industry

This fine study, developed from a doctoral dissertation, makes a distinctive contribution. It extends the substantial literature on the technological, business and labour history of the telephone industry in the United States between 1880 and 1980. The central focus is on the relationships between the work experiences of women telephone operators and managerial strategies relating to technological change and control of workers. By taking a century long perspective, Green is able to evaluate successive phases of this relationship.

In the early days of telephone, operators had direct contact with customers, but this changed with the expanding use of direct dialing and then the adoption of new electronic switching systems during the 1960s and 1970s. Consequently the book contributes significantly to our understanding of the changing forms of work, shifts in the US labour market and the ways in which gender, race and class intersected for workers, managers and unions.

Green's central argument is that management's primary motive was to use successive technological innovations to de-skill the work of the telephone operator and, at the same time, to increase the intensity of managerial control over what became primarily a female labour-force. This core narrative is accompanied by careful documentation of the workers' use of varied forms of resistance, from undermining rules and supervisors to participating in local and national efforts at union organising and to examples of direct action to resist managerial control. With its diversity of themes, each well integrated into the appropriate literature, the book has much to offer to historians and social scientists, though the sections dealing with the southern states are limited and northern cities, particularly New York, are the main focus.

The first three chapters deal with mechanisation between 1880 and 1919. There is a detailed discussion of the early technology of the telephone system and the role and skills required of operators. Initially, Green argues, operators used their skills to overcome the technological chal-

allenges in a system with a limited geographical range. They performed a broad range of tasks requiring an extensive knowledge and broad competencies. Changes in switchboard design altered the precise physical tasks compared to the pioneering days, but Green emphasises the operators' continuing role in achieving effective operation. Equally managers quickly sought ways to standardise tasks and to increase their monitoring of the operators' efficiency, attention to duty and dealings with customers.

Chapter 2 focuses on the significance of gender and race. Boys, suspect for their fighting, swearing and pranks, were replaced as operators by young, single native-born white women from the 1880s. The managers' ideal image was of the well-mannered, softly spoken 'lady' who could placate irate callers. As well as its service advantages, this image offered workers a sense of respectability and status, perhaps as compensation for limited wages and opportunities and closer managerial scrutiny.

The study skillfully interweaves evidence on managerial views and training systems with the career experiences of individual women, demonstrating the uneven processes through which formal work rules interacted with operators' actions. Workers perhaps retained more autonomy in smaller towns and exchanges. The evidence on operators invites further comparisons with notions of service in other sectors, such as offices, banks, and retailing. Perhaps phone callers' own expectations of service altered as the technology became more familiar, but, as with the diffusion of automobiles, there might well be variations according to class and region. Chapter 3 explores worker resistance before 1920, but suggests that acts of assertiveness and union organising counted for little in the face of management's control over the pace and character of innovation.

Chapters 4 to 6 consider the dial era, from 1920 to 1960 using the same organising themes. Further automation was the engineers' response

to the expansion of the telephone system in World War I that exposed the limitations of existing technologies. Management techniques became more sophisticated with employee associations and the idea of the Bell system 'family' being offered in the hope of cementing worker loyalty. Green argues that such a positive vision appealed not only to customers, but supplied an image of service that helped to deter anti-trust attention to Bell's dominance of the industry. Here the discussion might have benefited from comparing Bell and its workers more directly with other firms and sectors.[1]

There is a nuanced discussion of the diffusion of dial telephones during the 1930s with Bell combating public fears of technological unemployment and then tackling workers' organising efforts and union campaigns. Green concludes that neither craft-oriented male unionists nor middle-class female reformers fully represented the interests of women phone operators because concerns over wages and hours did not address the influence of technological changes and the pace of work. The Communication Workers of America developed policies towards restructuring and technological unemployment, but these were directed more to male technicians than to female operators. There are fruitful links here to Amy Sue Bix's recent study of attitudes to technology during the 1930s and 1940s.[2]

The last two chapters consider the consequences of computerisation during the 1960s and 1970s. The focus is more directly on the challenges to racial discrimination against African American women who, though making initial inroads late in World War II, were a small presence among telephone operators before 1968. Again the nature of technological change is described carefully in relation to the operators' role. Green discusses African-American women's challenges to their exclusion from the industry. The forms of resistance to the employment of African American women are identified among managers, white

workers and in the practices of labor unions, though Green indicates some exceptions in the labor movement. Finally there was an acceleration of employment of African American women as operators from 1965 in major northern cities.

In this respect the study adds to the burgeoning historical literature of industry-level studies of the impact of civil rights campaigns, state and federal legislation, and the attitudes of managers, unions, and workers to race and employment.[3] In the telephone industry campaigns against exclusion produced employment gains, but were aided little by state and federal legislation due to weak enforcement. Green explains the late and rapid pace of integration in terms of employers' desire to find new sources of low wage labour in the tightening labor market of the late 1960s. Here the study finds striking evidence of managers' opinions on the labour market and racial issues.

The prospective economic and social benefits of integration were offset, however, by the contraction of overall employment of operators and by the barriers to promotion as the significance of race and gender were refashioned. The discussion of recent developments again draws on the experiences of individual workers and the book's preface and introduction summarise Green's own experiences as one of the first female telephone 'switchman' in New York between 1974 and 1990. Some of the scope for comparisons with the earlier years is reduced since there is not quite the same attention to concepts of service in the 1970s. The discussion of training is more concerned with aspects of equal opportunity policies and rhetoric than with training generally.

Nonetheless Green identifies variations in management attitudes towards new employees and longer-serving workers that promoted divisions. For the contemporary British consumer, telephony offers the diverse experiences of mobile phones, the internet, recorded messages and the maze of push button routes to recorded messages. Perhaps everyone now functions as an op-

erator and hopefully Green will extend her analysis of the underlying technical and work relationships into the break-up of the Bell system and the further phases of innovation.

Notes

[1]. For similar arguments about family imagery see Roland Marchand, *Creating the Corporate Soul: the Rise of Public Relations and Corporate Imagery in American Big Business* (Berkeley, California: University of California Press, 1998).

[2]. Amy Sue Bix, *Inventing Ourselves Out of Jobs? America's Debate over Technological Unemployment, 1929-1981* (Johns Hopkins University Press, 2000).

[3]. For comparable recent studies see Judith Stein, *Running Steel, Running America: Race, Economic Policy and the Decline of Liberalism* (Chapel Hill, University of North Carolina Press, 1998); Timothy Minchin, *Hiring the Black Worker: the Racial Integration of the Southern Textile Industry, 1960-1980* (Chapel Hill, University of North Carolina Press, 1999).

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