Race on the Line: Gender, Labor, and Technology in the Bell System, 1880–1980. *By Venus Green.* Durham: Duke University Press, 2001. xv + 370 pp. Index, notes, illustrations, photographs, tables. ISBN: cloth 0-822-32554-3; paper 0-822-32573-X. Cloth, $59.95; paper, $19.95.

Reviewed by Alex Lichtenstein

In the pre-microchip era, few corporations proved more adept than the Bell System (AT&T) at pioneering "technological development as the most important tool for achieving domination over the industry as well as over the workers" (p. 11). Venus Green's important new study, *Race on the Line,* charts a century of technological change in the telephone industry, while paying close attention to the shifting gender conventions and racial attitudes that helped transform the labor process of the company's major group of employees, telephone operators.

Green divides her account into three stages of technological innovation, roughly corresponding to each third of the period she considers between 1880 and 1980: mechanization, automation, and computerization. In the early years, responding to gendered notions of "personalized service" (p. 18), Bell "executives acknowledged that they needed women operators to attract and to keep their customers" (p. 5). Technical imperfection required frequent human intervention to smooth over customer relations, a task seen by managers and workers alike as eminently suited to the feminine ideals of the day. This image, however, also depended on a racialized labor market: the ideal of the Bell System operator became a "white lady" (p. 57), according to Green. Thus defined, work as an operator in a telephone exchange offered young, native-born white women an unusual opportunity for entry into "a job with elitist qualifications" (p. 61). Indeed, Green shows that, in 1900, 94 percent of telephone operators were native-born whites; a similar percentage was under the age of thirty-five and single.

If the racial privilege associated with telephone operating did not diminish in the first half of the twentieth century, women's daily control over the work process did. As with other industries dependent on technological innovation, "new machines and changes in work organization degraded the job and the skills" (p. 55) that telephone workers had

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initially commanded. Along with the reorganization of work came a "depersonalization" of telephone service in the name of efficiency. It was not long before "operators had a great deal in common with factory girls" (p. 79), despite the alleged exalted status of their positions. And, like "factory girls," the operators both became objects of Progressive Era workplace reform and pursued collective action to redress their grievances.

In sharp contrast to Stephen Norwood's *Labor's Flaming Youth: Telephone Operators and Worker Militancy, 1878–1923* (1990), Green argues that telephone operators "yielded the ideological leadership of their struggle to their allies" (p. 110) among male trade unionists and middle-class female reformers. As a result, she suggests, despite their militancy, operators did little to challenge the technological degradation of their labor, though it is not entirely clear that, left to their own devices, they would have been any more assertive. In any event, by the post–World War I period, with "telephone service . . . an indispensable part of American life" (p. 116) and the Bell System's commitment to "personal service" eroding, female telephone operators found themselves at the mercy of automation and company unionism. Though sometimes undercutting her own thesis by suggesting that the "dial era" (1920–60) actually "enskilled" operators, Green argues perceptively that, in the face of employer paternalism and the march of automation, "operators relied more on their white exclusivity to maintain what they perceived to be an elite position" (p. 134). Furthermore, telephone unions' embrace of automation led to "higher-skilled and higher-paid work mostly for men" (p. 187) as increased plant and equipment-maintenance jobs supplanted reduced operators' positions.

As Green documents, both operators' trade unions and Bell System managers persisted in racial discrimination throughout the period of automation. It wasn't until the "computer era" of the 1960s, which coincided with civil rights challenges to workplace discrimination, that women of color proved able to break into telephone work as operators. By then, "management's motivation for perpetuating the 'white lady' image [had] atrophied" (p. 220), and black women found themselves working under far less desirable conditions than their white predecessors. Moreover, "as soon as job opportunities opened for black women, computerization . . . closed them" (p. 227), though Green remains a bit fuzzy about cause and effect here. Did technological degradation of operators' labor open opportunities for African American women, or did

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their presence impel the phone company to degrade the work further? Perhaps a bit of both. In any case, Green remains highly critical of what she perceives as the Communications Workers of America's insensitivity to women and minorities, as well as of the union's shortsighted unwillingness (or inability) to challenge the technological displacement of workers.

Above all, *Race on the Line* represents a model of research in corporate archives. Green's in-depth scrutiny of the AT&T collection allows her to juxtapose the company's public pronouncements and well-burnished image with the private sentiments of its managerial class on technological innovation, the impact of race and gender on labor-market decisions, and the business rationale for paternalistic corporate welfare. Moreover, her ability to interweave several analytical threads—technological change, gender conventions, and racial attitudes—demonstrates a sophisticated and supple approach to her material. As she insists, technological innovation did not inexorably lead to certain outcomes, but instead was always filtered through issues of corporate structure, business competition, gendered notions of "personal service," and racialized labor markets. *Race on the Line* effectively illustrates how the timing and implementation of technological "progress" in the workplace depended on social and cultural factors, not just on engineering technique and applied invention. This recognition of multiple influences on workplace reorganization and the labor process is a model refutation of "technological determinism," a sin to which Green's work never falls prey. Indeed, she concludes that "work degradation and deskilling are not inherent in new technologies" (p. 7), a statement we would do well to remember in this information age of keystrokes and just-in-time production.

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