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Résumé de l'article

Au début du vingtième siècle, les postes de télégraphistes en milieu urbain étaient occupés autant par des femmes que par des hommes. L'existence d'une telle main-d'œuvre mixte en télégraphie rend cette occupation qualifiée particulièrement intéressante pour l'étude des liens entre les attributs des sexes et de la qualification. En examinant le procès de travail et l'identité culturelle des télégraphistes, cet article décrit comment se concrétisa l'enchaînement entre la masculinité et la compétence de ces opérateurs. Quoique la transmission par l'alphabet Morse s'effectuait suivant des conditions propres à remettre en question une telle identification sexuelle, les changements technologiques au cours de la première Guerre mondiale nous apparaissent comme ayant contribué à accentuer la division sexuelle du travail et à lier encore plus étroitement la masculinité à l'habileté des télégraphistes.

"We may all soon be 'first-class men'":

Gender and skill in Canada's early twentieth century urban telegraph industry[1]

Shirley Tillotson

FOR MOST CANADIANS born since the Depression of the 1930s, telegraph operators are remembered only from Hollywood movies. Sometimes in a newsroom, more often at the train station in a one-horse western town, the operators in those movies seemed always to be wearing the old-fashioned clerk's eye-shade, and they were always men. Surprisingly, this stock movie-character is true to life (and not only in the costuming): press circuits and single-operator train stations tended to be staffed by men. But these were only two of the many different places telegraph operators were employed. In others, women predominated. And, in a rare exception to the longstanding rule of the gender-segregated working world, some large city offices employed almost equal numbers of both sexes.

The telegraph industry was based on the Morse electric telegraph, first used successfully in 1843. As this technology entered rapidly into commercial use, it began to transform human geography. By bringing remote points into instantaneous communication, the telegraph accelerated the conduct of commerce and politics, journalism and railroading. This transformation was accomplished by a fundamentally simple technology. A wire linked two sets of instruments, forming an electrical circuit. One set of instruments might be in Montreal, the other in Winnipeg, linked by a wire strung, pole by pole, across hundreds of miles. Each set of instruments had two basic parts. One was a hand-operated lever, called the "key," by which the operator opened or closed the circuit, thus sending short bursts of current through the wire. The other part was an electrically-operated lever, called the "sounder," whose movements in response to the electrical impulses sent by a distant operator's key made the clicking noises of Morse code, to be interpreted by the listening

[1]From "The Economic Objects of Unionism," *Commercial Telegraphers' Journal*, 2 (June 1904), 2.

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operator. This mid-19th century technology formed the economic and technical context for the early-20th century invention and use of wireless telegraphy and radio broadcasting. Land-line Morse telegraphy itself survived in military and railroad applications until the late 1950s, but in the industry's commercial branches, automated alternatives emerged in the 1910s and, after major improvements, entered into widespread use in the 1930s.

Although women were almost unheard of as railway operators, substantial numbers of them worked in commercial telegraphy. In Canada, there may have been some women operators as early as the 1860s; their employment in the main operating room of a large commercial firm was initiated c1870.[2] By the early 1900s, telegraphy was firmly established as one of the small number of skilled trades deemed suitable for women. Western Canadian offices seem consistently to have employed few women, but in the cities of central and eastern Canada, the proportion of women operators among main office staff-members was in some instances close to half. In 1902, 42 per cent of operators in Great Northwestern Telegraph's Toronto main office were women, while the roster in Toronto of Canadian Pacific Railway Telegraph (not part of railway operations) was 28 per cent female.[3] The distribution of women within commercial telegraphy itself was uneven, as is suggested by comparing aggregate figures (Table 1) with figures for specific firms (Table 2). With notable exceptions, women Morse operators tended to work in the lower-productivity branches of the industry. Only when the high-volume circuits were equipped with non-Morse instruments during World War I were women operators encouraged to work the "heavy wires."

But even though there was a degree of gender segregation within the telegraph work force, women and men often performed the same tasks on the same equipment, working together at either end of the wire in a cooperative labour process. Telegraphy thus provides an unusual opportunity for a case study of links between gender and skill. Under this industry's special circumstances, one might perhaps expect that workers' experience would have eroded the common ideological equation of masculinity and skill. Women operators might have claimed successfully the wages to which skilled status entitled their male co-workers. The experience of shared work might even have allowed operators to see gender difference in new ways. Any indications of such developments would support arguments such as Cynthia Cockburn makes about how gender is constructed by the work people do as adults. Her point is that "work is a gendering process," one which shapes

[2]McNicol Collection, Item 483, *Canadian telegraph and telegraphers*, clipping from *Maclean's Magazine*, "Great Men of the Key: Prominent Canadians Who Started as Telegraph Operators (no date), 16; Old Time Telegraphers' and Historical Association, *Proceedings*, "Reminiscences of Robert F. Easson (Toronto)," (Toronto 1920), 53.

[3]*Telephone & Telegraph Age* (hereafter *T & T Age*), 19 (1 Jan. 1902), 18-19; *T & T Age*, 19 (6 Nov. 1902), 490. Re: western city offices, see *International Union of Commercial Telegraphers Journal*, 1 (March 1903), 18.

Table 1
Percentage of women on the operator staff of particular firms[a]

Year	Total *n*	% of women	Place	Firm
1911-12	693	13.41	Canada	CPR Tel.
1912-13	639	15.49	Canada	CPR Tel.
1913-14	521	14.35	Canada	CPR Tel.
1914-15	522	17.43	Canada	CPR Tel.
1915-16	566	21.38	Canada	CPR Tel.
1911-12	1596	2.7	Canada	GNW
1912-13	1632	3.2	Canada	GNW
1913-14	1494	4.8	Canada	GNW
1914-15	1903	4.3	Canada	GNW
1915-16	2073	7.3	Canada	GNW
1911-12	63	5.39	Ontario	N.A. Tel.[b]
1912-13	65	30.76	Ontario	N.A. Tel.
1913-14	54	29.62	Ontario	N.A. Tel.
1914-15	54	29.62	Ontario	N.A. Tel.
1915-16	54	29.62	Ontario	N.A. Tel.

Source: Canada, House of Commons, Sessional Paper 20f (1913-1915). Government statistical reporting on Canada's telegraph labour began in 1911-1912; after 1917, no breakdown by firm was given.

[a]There is a substantial apparent difference in the proportion of women to men between the figures listed for GNW and CPR. CPR, however, lists only its urban office operators, whereas GNW lists its entire operator staff. The *Labour Gazette* (September 1916), p. 1547, gives a gender breakdown of GNW employees in which union members, more likely to be urban operators, are shown to be about 17 per cent female. This figure is much closer to the CPR's approximately 20 per cent female operators figure of the same year than it is to the aggregate GNW figure of 7 per cent for that year. Although available data don't permit certainty in comparing the gender composition of the two companies' work forces, nonetheless, it seems likely that, in the cities, they both employed a large minority of women operators.

[b]North American Telegraph.

Table 2
Percentage of women on the operator staff in particular telegraph offices

Year	Total *n*	% of women	Place	Firm
1894	13	15.0	Halifx	Western Union
1894	20	5.0	Winnipeg	CPR Tel.
1902	28	28.5	Toronto	CPR Tel.
1902	52	42.0	Toronto	GNW
1902	19	5.0	Vancouver	CPR Tel.
1902	5	00.0	Winnipeg	GNW
1917	62	17.7	Winnipeg	CPR Tel.
1917	33	18.0[a]	Winnipeg	GNW
1919	45	20.0[b]	Vancouver	CPR Tel.

Sources: Labour Gazette; Records of the Department of Labour, Strikes and Lockouts file; *Telephone and Telegraph Age*.

[a]Department of Labour field representatives reporting on the 1917 strike described the gender composition of the Winnipeg GNW offices in various ways. The highest proportion of women operators given was 22.6 per cent, the lowest 13.7 per cent.

[b]All but one of the women operators in this office were automatic printer operators.

most, if not all, of adult life.[4] Conceivably, this should mean not only that sex-segregated work exaggerates gender differences, but that telegraphy's unusually integrated workplaces might have minimized them. Alternatively, if women were less respected and less well-paid than men in telegraphy as elsewhere, then the case of telegraphy can show how such differences have been reproduced, even without the support of differences in job tasks.

The case is complicated by technological changes in the early-20th century industry. But rather than muddying the analytical waters, the technology issues actually help clarify the relations of gender and skill. As the operators' union fought to control the effects of automation during World War I, operators became especially conscious of the meaning of skill. Both the strategy of the union's struggle and its outcome speak volumes about how the privileges of skill were reserved for male workers. Although the shared experience of cooperative labour had indeed challenged the myth of female incompetence, other forces, both

[4]Cynthia Cockburn, *Machinery of Dominance* (London 1985), 168 and ch. 6 generally.

material and ideological, had apparently confirmed it. Ultimately, only a few particles of cross-gender solidarity sifted through the male-privileging filter of the new telegraph technology. In what follows, a discussion of the telegraph labour process will provide the basis for explaining how gender differences in skilled-worker status and wage levels were constructed. A concluding section on the politics of technological change will show how the earlier links between gender and skill were remade in a new form.

I

The Labour Process

THE INDUSTRY IN 1900 was prospering, although its future would not be as bright as its past. The two main firms, Great North Western (GNW) and the Canadian Pacific Railway Telegraphs (CPR) had about 3000 offices, there being two GNW offices to every CPR one.[5] Most of these offices — about 95 per cent — employed only one operator and were located in towns or villages.[6] However, the analysis here focuses on urban offices, where both union activity and automation were concentrated.[7] Each employing as many as 100 operators, the central urban offices relayed incoming messages from "outside" points and also transmitted business originating in the city. City offices included smaller firms handling specialty business and one-operator accommodation offices similar in function to today's drug-store post-offices. Most urban operators worked in the main offices, in

[5]The CPR Telegraphs had its own staff, management, and budget, but it was a department of CPR and not an independent company. It employed about 600 operators who did nothing but commercial work, in addition to the many offices which were staffed by train operators or station agent/operators. In referring to CPR Telegraphs as simply "CPR," I follow the contemporary practice of telegraph operators. ("CP" was used to refer to Canadian Press after its formation in 1911.) On the number of offices, see John Murray, *A Story of the Telegraph* (Montreal 1905), 119-20.

[6]The estimated percentage is based on the difference between the number of GNW offices covered in the 1920 union contract and the number of GNW offices listed in the 1920 Dominion Bureau of Statistics *Telegraph Statistics*. The contract covered GNW's 58 offices in Canadian cities and telegraph centres. About 20 per cent of these offices employed three or more operators; more than half were in smaller centers and employed only two operators, one being the designated manager. Another 22 per cent employed only a manager/operator. Out of the 2,080 operators employed by the GNW, these 58 offices would have employed at most 600 operators, assuming that the five main offices each employed about 100 operators. The remaining number of operators equals approximately the number of GNW offices not covered in the contract.

[7]I have discussed the case of certain rural operators, a group which came to be composed almost equally of women and men, in "The operators along the coast: a case study of gender, the link between skilled labour and social power, 1900-1930," *Acadiensis*, 20 (Autumn 1990), 72-88.

high-ceilinged operating rooms on the upper floors of tall buildings, far from the public they served. Wires linking the office to outside points were routed through a switchboard, then run along under the flooring and hooked up to telegraph instruments at stations on long tables. There might be 40 or 50 wires in a central office, ten to a table, with five operators on each side.[8] The scene resembled a factory more than an artisan's shop.

In spite of the work-stations' apparent homogeneity, the labour performed at each could differ considerably. One reason was that the amount of traffic on each of the wires varied. Some were constantly busy, requiring round-the-clock attendance. These were the wires on the trunk lines that connected Toronto and Montreal to each other, to American points such as Chicago or New York, and (as the western economy boomed) to Winnipeg and Vancouver. Wires connecting smaller centres or feeding into the main office from small places were called "way wires," and carried less traffic. They were likely to have full-time operators only at certain times of day. One operator might take care of several way wires at a time.[9] Trunk and way wires were often referred to as "heavy" or "light" wires, in reference to the different volumes of traffic they typically carried.

As well, some of the heavier wires were operated with special telegraph systems, either the "duplex" or the "quadruplex" (usually called the "quad"). These were circuits designed to carry signals in two directions on one wire, simultaneously. The quad was capable of carrying four messages (two in each direction) at once. Their purpose was to economize in the use of existing wires by increasing the traffic circuits could carry. Extremely sensitive to weather conditions, they were troublesome to use. Moreover, an interruption in one of the transmissions caused the others to break as well. Gradually, however, improved circuit conditions made the use of quad and duplex circuits more viable. In 1891, there were only 14 duplex circuits in Canada, most owned by CPR, and mainly used for emergencies.[10] But by 1915, their use had expanded considerably, with Canadian companies owning a total of 174 duplex and 81 quadruplex instruments, for a potential 107 circuits.[11] Most of these linked main offices.

The labour of main-office operators was subject to a close discipline. Operators were expected to stay at their keys constantly, with relief and lunch breaks often

[8]McNicol Collection, Item 483, *Canadian telegraph and telegraphers*, clipping from *T & T Age*, (16 October 1913), 619-20.

[9]Interview #1, tape #2, side A, 141-7.

[10]National Archives of Canada (NAC), Records of the Department of Public Works, RG 11, series B3(c), vol. 2859, file 1-1-1, D.H. Keeley, "Developments in Telegraphy," paper presented to the Canadian Society of Civil Engineers, 1891.

[11]Canada, *Sessional Papers of the Parliament of Canada, Sessional Paper 20f* (1917), 12; McNicol Collection, Item 483, *Canadian telegraph and telegraphers*, clipping from CPR publication, 1917, states that there were 21 long distance duplex circuits in use, and another unspecified number of duplex and quadruplex services for shorter distances.

being subject to the demands of traffic.[12] Boys and girls called "check clerks" brought messages to the operators and removed finished work.[13] Operators' workload, the order in which messages were sent, and the pace of work were determined to a large extent by chief operators and supervisors. Main office operators were under constant pressure to pound out code; in the rush to extract the most work from their staff, supervisors might tear an operator away from a job, saying "I'll finish this, you take care of that one...."[14] Specialty operators' work, by contrast, was subject to a kind of technical control. Both in brokerage houses and in press wire services, they faced the discipline of deadlines which created or destroyed the value of the information that was their product. Compared to main office operators or those in telegraphy's most time-sensitive branches, the accommodation office operators had much greater control over procedural decisions.

And yet, these operators were also subject to considerable pressure. In accommodation offices, a single person might juggle two or three jobs at once, with the urgency of customer's needs being brought home directly by the customers themselves, fretting or fuming at the counter.[15] And whereas the main office operator was subject to the "tyranny" of petty officials, the operator in a hotel lobby or drug-store had to put up with whatever passing tyrant chose to send a telegram.[16] The treatment operators endured in this respect no doubt resembled that experienced by other workers serving the urban public. But because a telegram was often sent in a hurry or in a anxious moment, the branch office's customers were likely to have been more difficult than, say, patrons of an ice cream parlour.[17] In different ways, the "emergency" character of the industry had its stress-inducing effect on all urban operators. In this context, pleasant relations with fellow operators would be highly valuable, and yet more difficult to sustain.

This was particularly true because the labour process in telegraphy was cooperative. Communicating a message was not an individual accomplishment; of

[12]Questionnaire #1, answer #30; "Konenkamp Testimony" and "McElreath Testimony," *Final Report and Testimony submitted to Congress by the Commission on Industrial Relations* (hereafter *U.S. Commission on Industrial Relations*), Basil M. Manley, director, U.S. Senate document #415, 64th Congress, 1st session (Washington 1916), 9311-2, 9393.

[13]McNicol Collection, Item 489, *Early telegraph rule books*, file 9, Postal Telegraph-Cable Company Rules, (1903-11), 12; Marjory McMurchy, *The Canadian Girl at Work: A book of vocational guidance* (Toronto 1919), 60; McNicol Collection, Item 518, *Telegraphica's Ghost*, 30.

[14]*Commercial Telegraphers' Journal* (hereafter *CTJ*), 13 (1915), 142.

[15]U.S. Bureau of Labor Statistics, "Displacement of Morse Operators in Commercial Telegraph Offices," *Monthly Labor Review* (March 1932), 507.

[16]Graham Taylor, "The Industrial Viewpoint. Women Telegraph Operators," *Charities and The Commons*, 19 (5 October 1907), 864; Mary E. de Ginther, "The Public's Ignorance of the Telegraph," *T & T Age*, 19 (1902), 55.

[17]McNicol Collection, Item 486, *Early telegraph poetry, 1896-1908*, n.p. [story contrasting the behaviour of distraught lady customer and calm, competent business-man customer.]

necessity, at least two people were required. On duplex and quad systems, as many as eight operators depended on each other to keep the traffic flowing. The challenge facing those specialized operators was identical to that which every operator faced: finding the appropriate sending style and speed.

The company rule books all stated emphatically that "The sending operator must regulate the transmission of a message, to suit the ability of the receiving operator."[18] But this was more easily ordered than obeyed. The sending operator had to assess the ability of his or her receiving partner. Supposedly, the receiving operator would signal "BK" (for "break") if he or she couldn't follow the transmission. Sometimes, though, the receiver might not want to break, even though the transmission was unclear. Certain senders were known for being abusive and impatient with operators who broke too often.[19] Receivers would sometimes choose to guess at a word rather than break on such an operator's transmissions. Or a vain or insecure operator might be unwilling to admit that another operator was sending too fast for him or her to copy. Operators receiving press from a wire service knew that another half-dozen operators on the same circuit might also be receiving, and that for one to break would be to interrupt the transmission for all.[20] Operators might tire of asking for repeats from a chronically "illegible" sender, or be reluctant to make a pleasant but incompetent operator feel bad by the implicit criticism of constant breaking.[21] If for any reason operators wished to make themselves unpleasant, they could do so by sending quickly or sloppily, or by breaking unnecessarily and criticizing the receiving operator's skill. Operators even had an expression for the practice of deliberately sending too fast — they called it "giving someone a roast" or simply "roasting" someone. Sometimes roasting was just a game, but it could also be a way of putting an operator in his or her place. It was an unusual practice; operators generally observed the speed rules and enjoyed the cooperative quality of their work. Looking back over a 40-year career, an Ontario operator recalls his ability to accommodate slower operators as one of his strengths.[22] Nonetheless, cooperation also meant that interactions on Morse circuits easily could become power struggles. As another operator wrote, "Some of us

[18]Government Telegraph Service, Department of Public Works, Dominion of Canada, *Rules* (Ottawa 1889), 18; McNicol Collection, Item 489, file 9, Postal Telegraph-Cable Company Rules, (1903-11), 20; G.M. Dodge, *The telegraph instructor* (Valparaiso, Ill., 1917, 6th edition), 240. This text was written by a Western Union manager, and was intended for use in training students to work at GNW, too (60). (For Dodge's position, see *T & T Age*, 16 (November 1918), 508.)

[19]Questionnaire #1, answer #28; Miss M.J. Schofield, "Wooing by Wire," *Lightning flashes and electric dashes; a volume of choice telegraphic literature, humor, fun, wit and wisdom.* 3rd edition. Comp. W.J. Johnston (New York 1882), 95. [McNicol Collection, Item 151. *Lightning Flashes* was still in print as late as 1902 (*T & T Age*, 1 January 1902, xiii.]

[20]Recollections of interviewee #1, page four, unpublished typescript.

[21]Questionnaire #2, answer #36.

[22]Questionnaire #3, answers #35 and #26.

obviously were not as good as some others so the potential for friction was always there."[23]

Other operating rules and descriptions of the work process further demonstrate this. "Contention for the circuit" was forbidden, reflecting the fact that operators in a hurry might try to interrupt a transmission, claiming that their business took priority. There were protocols to follow, but these required interpretation according to circuit conditions such as the size of the various offices and the characters of individuals working the wire.[24] Furthermore, particular circumstances required judgement calls. For instance, if a message was a "pink," it supposedly had priority, but operators might differ on whether an important press dispatch should be interrupted even by a pink.[25] An operator's ability to assert his or her own judgement determined the outcome of such disagreements. Operators developed their own ways of contacting and communicating with other operators in specific circumstances. A Brandon, Manitoba operator was particularly proud of his ability in managing relationships on the line:

> [I] was considered a strictly first-class man. I always did my work in the proper manner and never in my entire two years of service [in Chicago Postal telegraph] did anything on the wire which created friction between myself and operators at the other end. In fact, I had one of the best records in that office for being able to work successfully with operators who were inclined to be flighty or scrappy.[26]

In short, handling egos was as much a part of an operator's work as handling a telegraph key. Considerate, helpful operators made work easier; domineering, cavalier, or self-righteous ones made work more difficult.[27]

While all operators' jobs required that they endure pressure and cooperate in close interdependence, there nonetheless were notable differences between the responsibilities of various classes of operator. Broker work emphasized concentrated, high speed performance, and required some familiarity with a certain terminology and trade. Press, too, had a specialized code which abbreviated most English words. Press sending required steady production over long hours, and

[23]Questionnaire #2, answer #28.

[24]McNicol Collection, Item 516, *Telegraph Labor strikes 1885-1922*, File 10 (Reprint of Testimony of Edward Reynolds before the United States Commission on Industrial Relations, 13 April 1915), 10.

[25]Interview #3, side A, 519-540; U.S. Bureau of Labor, *Investigation of Western Union and Postal Telegraph-Cable Companies* (Washington 1909), 11.

[26]*U.S. Commission on Industrial Relations*, Henry Lynch exhibit on exiled operators, E.M. Wood to CTUA President S.J. Konenkamp, 17 March 1917, 9516.

[27]Mrs. M.L. Rayne, *What Can a Woman Do: or, her position in the Business and Literary World* (Petersburgh, N.Y. 1893), 142; Questionnaire #2, answer #35; Interview #1, tape #1, side B, 234-241, 266-274, 415-418; Interview #3, side A, 284-294; Interview #2, side A, 367-373.

sometimes meant work at the scene of news events. Work in small offices meant handling multiple jobs, sometimes simultaneously. It also required that the operator advise inexperienced customers, and control or soothe fractious ones. Within main offices, operators' jobs were differentiated by the amount of traffic on the wires they were assigned and by the equipment they used. In the hierarchy of skill, broker operators ranked highest, followed by press operators. Within the main offices, those who worked the duplex and quad circuits were considered most skilled; working the way wires offered less status and lower wages. Lowest in stature, and least prosperous, were the branch office and hotel operators.

The available evidence permits no exhaustive specification of how women and men were distributed among the telegraph industry's branches. But evidence from union and trade journals, newspapers, telegraph schools, government documents and former telegraphers' recollections offers a clear pattern. Men were all but a few of the brokerage and press operators, while the small urban office and light wire positions were often, though not always, occupied by women.[28] This gender division of labour was constructed in ways which allow us to see the deeply rooted connections between masculinity and skill. The apparent ability of any individual operator was profoundly conditioned by the interdependent labour process.

II

Structural determinants of wages and status

THE GENDERED PATTERN in the operator skill-hierarchy was the product of two dynamics in the organization and conduct of the telegraph operator's work. One of these dynamics was gender relations between male owners or officials and women workers; the other was gender relations within the operators' craft culture. In part, limitations imposed by both dynamics on women operators' opportunities to acquire certain competencies produced a loose pattern of gender segregation. Wage and status differentials between women and men then proceeded from employers' skimpy rewarding of competencies exercised on low-traffic wires and in the smallest offices.[29] Women operators' wages were thus a product of both class and

[28]NAC, Records of the Department of Labour, RG 27, vol. 333, strike 57, Report of J.A. Clark, 15 September 1924; NAC, RG 27, vol. 342, strike 24, Report of Frank B. Powers, 15 May 1929; confirmed *vis-à-vis* the brokerage industry in Interview #3, side B, 152-163; *U.S. Commission on Industrial Relations*, 9307, 9318; *CTJ*, 18 (1920), 500, 502; McNicol, Item 510, file 10, clipping from *T & T Age* (16 October 1909), 725; McMurchy, *Canadian Girl*, 59-60; Interview #1, tape #2, side A, 139-147; *T & T Age*, 15 (16 Nov. 1894), 410; *T & T Age*, 14 (1 February 1894), 12; *CTJ*, 20 (1923), 398; personal communication, re: grandmother's career, from questionnaire respondent #2.

[29]The determinants of wages and status in the telegraph industry's geographical periphery is considered in more detail in chapter four of my "Canadian Telegraphers, 1900-1930: A Case Study in Gender and Skill Hierarchies," MA thesis, Queen's University, 1988.

gender relations. Gender also shaped the intraclass, personal relations of the labour process, determining in another way the link between masculinity and skill-definition. In studying telegraphy's skill hierarchy, I have found, as did Joy Parr in her work on the hosiery industry, that "the processes that human-capital, dual-labour-market, and feminist theorists have isolated are forced to keep the same awkward company [in historical analysis as] they do in real life."[30]

The boundaries of wage determination were set by the state of the communications market. Commercial telegraph firms were still prosperous at the turn of the century, but their position was no longer as secure as it had been. Telephone systems were taking over local services, leaving mainly long-distance business to the telegraph. GNW was sufficiently unprofitable by 1915 that American Telephone and Telegraph (owners of Western Union since 1910) disposed of their controlling interest in GNW, selling it to Canadian Northern. Two years later, the financially-troubled Canadian Northern was purchased by the Dominion government.[31] Only then did the telegraphers' union have any success in edging GNW employees' wages upward. The subsidized CPR telegraph was less exposed to market conditions than was GNW, and thus had kept its wage scale slightly higher.

Before the union's successes, general commercial operators' monthly incomes in 1907 Toronto ranged from $15 to $80, with women's maximum at about $40.[32] This maximum was slightly higher than the 1911 Canadian average for female clerical workers. The minimum, however, was as low as the national average for all women workers in 1901, and only one dollar more per month than a female general servant's wage in 1900. The men's maximum exceeded the average wage of male clerks by about 25 per cent.[33] By 1920, the range of operators' wages had been raised, although widened, with a minimum of $75 and a maximum of about $155 in central Canada.[34] Single-operator offices carried salaries of about $100 per month, while 70 per cent of main office operators in Toronto were paid $142 or $149.60. These wages, if they were collected without interruption, put even men operators among the best paid of skilled workers.[35] Press and brokerage services

[30]Joy Parr, "Disaggregating the Sexual Division of Labour: A Transatlantic Case Study," *Comparative Studies in Society and History*, 30 (1988), 512.

[31]Robert E. Babe, "Telegraph," *The Canadian Encyclopedia* (Edmonton 1985), 1795; NAC, Records of the Canadian National Railway, RG 30, History of the Great North Western Telegraph Company of Canada; *CTJ*, 8 (7 July 1910), 208; Judson C. Welliver, "Will take and keep all the wire lines; cabinet favours it," [*New York Evening Globe*?], 7 July 1918 (reports A.T.& T.'s willingness to have government take over the telegraph business).

[32]NAC, RG 27, vol. 557, strike 2975, "Strike To-day to be General," *Toronto Mail and Empire*, 14 August 1907.

[33]Graham S. Lowe, "Class, Job and Gender in the Canadian Office," *Labour/Le Travailleur* 10 (1982), 21; Alison Prentice, *et al.*, *Canadian Women: A History* (Toronto 1988), 125.

[34]*CTJ*, 18 (1920), 489-90.

[35]As a point of comparison, see the 1921 "skilled labour" wage quoted by Bryan D. Palmer, *Working-Class Experience* (Toronto 1983), 145.

were not much affected by telephone competition; they took full advantage of Canada's early-20th century economic expansion. In 1920, for example, press operators' monthly income ranged between $150 and $200.[36] The expanding brokerage firms could afford to pay as much as twice the scale paid to union commercial operators, so as to attract whatever operators they chose.[37]

The higher wages of the specialty operators may be attributed in part to variations in industry markets. But their wages were also linked to productivity, and within general commercial firms, productivity alone was supposedly the telegraph owner's basis for establishing wage scales. Whoever handled the most messages was producing the most revenue for the employer, and a high wage was the productive operator's reward. However, this apparently-objective standard did not prevent the power relations of gender and class from structuring workers' rewards.

The operator's level of productivity was determined partly by a complex set of operator competencies: ability to read code, orderly work habits, kinetic co-ordination, judgement about circuit conditions, and ability to work successfully with other operators and customers. But productivity also was determined by the volume of traffic to be handled and the range of tasks included in the operator's job. In these respects, the branch-office operator was at a disadvantage, with fewer messages to handle and more diverse tasks than the main-office operator. Even among main-office operators, not all operators worked under equal conditions. In telegraphy's interdependent labour process, an operator's output was not a pure reflection of his or her individual competencies. But in setting wages, the telegraph managers used simple productivity measures that reflected only the owners' economic interest. The count of messages sent, messages received, and errors made was an index of the revenue produced by the individual operator's labour. Accurate for this purpose, such measures obscured the social relationships which affected productivity; consequently, simple productivity measures distorted the definition of skill.

Officials' attitudes and beliefs about individual operators or a certain class of person could affect operators' productivity records.[38] For instance, handling the short, quick, day messages helped spruce up an operator's productivity record, but supervisors had absolute discretion as to who handled what kind of messages. Operators were not always convinced of their managers' objectivity; one wrote,

[36]NAC, RG 27, vol. 333, strike 57, Report of J.A. Clark, 15 September 1924.; *CTJ*, 18 (1920), 532.

[37]The stock brokerage business alone expanded from 1,724 people working as stock brokers in 1921 to 4,873 thus employed in 1931. Before 1921, stock brokers were included with commodity and pawn brokers in one census category. This occupational category grew in number from 1,251 in 1892 to 3,109 in 1921. *Census*, vol. IV, Population — Occupations, 1921, 6-7, 30, 114; vol. VII, 1931, 318. On wages (for the 1920s): Interview #1, tape #1, side A, 088-095, 577-587; Interview #3, side A, 576-583.

[38]McNicol Collection, Item 516, file 10, Reynolds Testimony, 25.

"When a traffic-chief tries to convince me that I get my share of the short messages his talk sounds like a bundle of loose axe handles."[39] An operator's productivity also was determined by the quality of the circuit he or she worked. Short circuits or circuits made of copper wire were "faster" than long, iron ones. On a slow circuit, operators could send no faster than about 20 words per minute without garbling the transmission. Speeds of 40 words per minute were possible on fast circuits.[40] Which circuits an operator worked was decided by the supervisor. Therefore, although wage rates were set according to an operator's productivity record, the creation of that record was affected by power relations. In the creation of an operator's record, management practices mediated the link between competence and productivity, and in this way determined whether an operator's ability would translate into an entitlement to high wages. Depending on the place he or she was assigned in the labour process, a competent worker might not acquire a particularly good productivity record.

Operators' output depended not only on the kind of work they were given, but also on the quantity they were expected to perform. Expectations were affected by preconceptions about gender. For instance, American telegraph superintendents in the early 1890s said that "they do not call upon women to perform" at the rate of 1500 words per hour, and that they "do not expect such a service of them."[41] In 1915, a man influential in the Canadian industry told an American government commission that "Some of the most efficient, up to a certain point, of our labor, is by women; but women have not the telegraphic capacity of men."[42] During the same hearings, the international president of the Commercial Telegraphers' Union of America gave a less sexist view, emphasizing women's equal competence while noting that they usually were employed on lighter wires.[43] In fact, officials' sexist assumptions prevented most women operators from getting the experience on heavy wires necessary to increase their productivity. Even working for two weeks as a relief operator on a heavy wire could raise an operator's work from second to first class.[44] One reason, then, that women remained in low-productivity jobs was

[39]McNicol Collection, Item 517, *Telegraphers' penmanship*, 1918, Unidentified typescript, containing only the quoted sentence and a stanza of verse:

"The chief walks round the office with his pen behind his ear,
Listnin' to the clickin' of the sounders that are near,
He watches for the orders, as he squints beneath his specs,
And I often wish he'd slip me more of the short ones and the blacks."

"Blacks" were day messages, as distinct from night messages ("reds"). They were charged out at a higher rate per word than were reds, and so were generally shorter.

[40]Donald McNicol, *American Telegraph Practice* (New York 1913 [second impression of first edition, corrected]), 207.

[41]Rayne, 137.

[42]*U.S. Commission on Industrial Relations*, 9307.

[43]*U.S. Commission on Industrial Relations*, 9318.

[44]Interview #3, side A, 366-376.

that their employers expected less of them than of men, and so denied them challenging opportunities.

Other forces shaping women's place in telegraphy are apparent in a comparison of women's and men's "career" paths. Generally, operators who grew up in cities had their earliest operating jobs in city branches or on way wires. "Star" operator Billy Gibson began at age 12 in a Montreal hotel office.[45] Successful operators would move on to heavier circuits.[46] A learner of average aptitude could handle any wire in the main office after about seven years' experience.[47] From there, the operator might advance to a supervisory position or to press or broker work.[48] But gender differences in life-cycle combined with features of the telegraph business to delay women's training, and exclude them from the industry's higher ranks.

Boys got a head start in the industry because only boys were hired as messengers. Being a messenger was the cheapest, easiest way of learning how to be a Morse operator. Boys were encouraged to learn code and practise operating in the spare time between delivering messages or after their shift. But girls were so rare as messengers that when World War I labour shortages prompted companies to take on girls, it was big news.[49] In Ottawa, the Children's Aid Society only allowed employment of girls on the condition that they have a separate entrance and their work be confined to dealings with the Imperial Munitions Board.[50] A few years earlier, American social workers had expressed concern about the dubious moral influences to which messenger boys were subject. The prospect of putting girls in the position of possibly running errands to bawdy houses was even more gruesome. Such concern prevented the employment of girl messengers, though not of young boys.[51] The definition of young girls (and, indeed, of all women) as potential victims of male lust, capable of being safeguarded only by seclusion and purity of character, worked to deprive young girls of one means to earn a living

[45]McNicol Collection, Item 510, *Telegraph and radio sending and receiving contests*, W.M. Gibson to D.M. McNicol, 17 March 1917; McNicol Collection, Item 483, *Canadian telegraph and telegraphers*, Application of Milton O. Hoffman to Old Time Telegraphers' and Historical Association.

[46]McNicol Collection, Item 98, clipping of article by Floyd S. Chalmers, "Great Men of the Key: Prominent Canadians Who Started as Telegraph Operators," *Maclean's Magazine*, n.d.

[47]NAC, RG 27, vol. 557, strike 2975, "The Telegraph Situation and its Effect on Canadian Operators," 12 August 1907.

[48]This career path is evident in the biographies of unionists and company superintendents. See *CTJ*, 20 (1923), 398; *CTJ*, 13 (1915), 130; *CTJ*, 18 (1920), 501; *CTJ*, 18 (1920), 536; *CTJ*, 18 (1920), 518; *T & T Age*, 19 (16 January 1902), 41; *T & T Age*, 19 (1 December 1902), 41.

[49]*The Postal Telegraph*, (December 1917), 2-7.

[50]NAC, RG 27, vol. 310, strike 30, "Girl Messengers on Special Work," *Ottawa Citizen*, n.d.

[51]*U.S. Commission on Industrial Relations*, 9303.

and learn a trade. Instead of starting as messengers, girls entering the urban telegraph industry usually took a course or were hired as learners, beginning at about age 18.[52] Boys' first operating jobs did not always start as early as age 12, but a boy leaving school at age 14 to work as a messenger could get a paid operating job in a year and a half or two years' time. Someone very keen and quick could acquire basic sending and receiving abilities in a year or less. As young children, boys were more likely than girls to have been encouraged to take an interest in telegraphy. Some boys even knew Morse code before beginning their first messenger job.[53] At age 23, if a male operator had worked steadily, had pushed himself, and had been expected to perform at the top of his ability, he would be as competent as possible. If he was on good terms with his supervisors and not suspected of union activity, his productivity would be high and he would be earning enough to contemplate supporting a family. A female operator of the same age might still be earning less than she needed even to live independently, because she would have had fewer years of practice, and less would have been expected of her by telegraph managers. With two operators of equal aptitude, substantial differences in performance would result from different amounts of practice. This was especially true in the first seven years of operating.[54] Differences in ability resulting from differences in amount of practice and length of career meshed with stereotypes about female inferiority to obstruct further women operators' development and hence their access to the best-paid, highest-status jobs.

The jobs deemed highly-skilled were few; only a small proportion of telegraphers could hope to get well-paid work on high-volume wires. Most operators in urban offices left telegraph operating before reaching middle age. Data showing the precise age distribution of Canadian operators is not available; however, data from a 1908 US Department of Labour inquiry show a preponderance of young operators. Seventy-eight per cent of operators in four mid-sized US cities were less than 40 years of age. Fifty-eight per cent were 31 or younger.[55] Representatives of

[52]This difference is apparent in the biographical information given by Canadian applicants to the Old Time Telegraphers' Association (OTTHA). The three women applicants started at ages 17, 18, and 19. Male applicants began as early as age 10 and half of the male applicants to the OTTHA began at age 14 or earlier. The latest starting age was 20. McNicol Collection, Item 483, *Canadian telegraph and telegraphers.* For a reference to the GNW hiring as "learners" individuals not yet finished a course in telegraphy, see George D. Perry to Dominion School of Telegraphy, 18 January 1917, reprinted in Dominion School of Telegraphy, *Prospectus* (1917), 20.

[53]Interview #3, side A, 313-318; D.F. Comstock, "A Practical Home-Made Telegraphing Instrument," *Woman's Home Companion* (April 1905), 44. This article, printed on "Aunt Jane's Pages for Boys and Girls" was introduced as being for "our boys," was illustrated with a picture of a boy and described the project as being conducted by two boys.

[54]Questionnaire #3, answer 28.

[55]These figures were derived from data reported for Buffalo, Philadelphia, Cleveland, and Minneapolis in 1908, printed in U.S. Bureau of Labor, *Investigation of Western Union and*

the union, management, and the trade press all agreed telegraphy was a young person's occupation.[56] But advancing age did not inevitably disqualify men and women as operators. Instead, the policies of telegraph companies and sexist assumptions about gender and skill effectively reduced the number of candidates for jobs at the top of the hierarchy.

The Commercial Telegraphers' Union of America (CTUA) pointed out one way in which operators' working lives were curtailed. Up to a certain point, companies increased an operator's ratings in relation to his or her developing competencies. But when officials judged that jobs could be done by less-experienced operators who had not yet been assigned the higher ratings, older operators were laid off. In the words of CTUA president S.J. Konenkamp:

> The men find that after reaching the age of 30 or thereabouts, if they have been able to stand the treatment they received during that period, that instead of getting work, regular employment, they are assigned to the waiting list.... And then the higher the salary the less the likelihood of being called.... [I]f they have any person receiving a rate of $50 a month that could do the same work that you are being paid $80 for doing they would call the $50 a month operator first.... [T]hose who have spent 15 or 20 years in the service find that they are at the bottom of the list.[57]

This picture was confirmed by the CTUA's Ottawa correspondent in 1915, in a discussion of "the determined effort of our worthy GNW traffic superintendent to reduce the top ratings all to $55.00." The correspondent wrote that operators earning more than $55 were being fired, and "With chiefs working wires regularly and 'ambitious' juniors proud of being given the chance to show that they can do a man's work (wages no object), the business gets moved some way and the company makes a little more money...." Only if an operator would come back to work at the lower rating of $55 would he or she be rehired.[58] This sort of practice (against which the union had been fighting since the late 1870s) made many operators look beyond commercial telegraphy for a more stable source of income.

The telegraph companies' punitive policy towards older operators was directed primarily towards men. Konenkamp noted that women operators seemed to

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Postal Telegraph-Cable Companies (Washington 1909), Table III-A, 74-8, 82-94. This data describes a sample of the telegraph workforce comprising about 20 per cent of the total telegraph workforce in these cities. The proportion of men to women is greater in the sample than in the total telegraph workforce: 84 per cent men in the sample, 75 per cent in regular telegraph workforce.

[56] *U.S. Commission on Industrial Relations*, 9321; McNicol Collection, Item 516, file 2, Clipping from *T & T Age* (1 August 1922); NAC, RG 27, vol. 557, strike 2975, "The Telegraph Situation and its Effect on Canadian Operators," 12 August 1907; *T & T Age*, 19 (1902), 168-9; *The Postal Telegraph*, (August 1910), 16.

[57] *U.S. Commission on Industrial Relations*, 9321.

[58] *CTJ*, 13 (1915), 144.

get steadier work.[59] A deliberate policy against top-rated operators was not necessary for women; companies needed only to invoke women operators' alleged lack of "telegraphic capacity" to justify keeping their wages down. Also, a certain proportion of female operators could be expected to leave the workforce at least temporarily (and perhaps permanently) to keep house and raise a family.[60] The companies' assumption was that the wages of women operators supported only individual women. Once a woman operator married, she would supposedly be at most a secondary wage earner. Defined by the companies as either temporary or unmarried workers, women operators were therefore believed neither to merit nor require a stable and high wage, i.e. a "family" wage. For the companies, this patriarchal definition of women workers served the same useful purpose as the policy of sidelining top-rated men.[61] Although more directly responsible for the latter practice, the companies' interests were served equally by both. Both the exclusion of women from top ratings and the laying-off of senior men reduced payroll expenses. The companies' ways of rewarding skill, and thus defining it, were structured by gender.

III

Craft standards of skill

THE FOCUS ON PRODUCTIVITY to this point has meant a corresponding attention to wages and employers' standards of skill. But although operators themselves took speed seriously, it was not their sole criterion of excellence, nor were wages the only reward of skill. Operators also valued each others' work in aesthetic and social terms. Defining skill in these ways helped operators derive pleasure and self-respect from their work, maintaining standards somewhat independent of employers' material power. These standards became part of the ground from which organized

[59] *U.S. Commission on Industrial Relations*, 9321.

[60] *CTJ*, 20 (1923), 398; *CTJ*, 18 (1920), 541; Interview #2, side A, 146-150, 153-161 (This operator said in a note to the author that most companies would not employ both husband and wife — one had to resign); Questionnaire #1, biographical data; "Misses" predominate among women named in staff lists: e.g. "Letters from our Agents. Toronto GNW," *T & T Age*, 19 (1902), 18-9; "Toronto CPR," *T & T Age*, 19 (1902), 490; "Notes from Halifax Western Union," *T & T Age*, 15 (1894), 410.

[61] The comfortable fit between the telegraph employers' preference for young workers and the usual departure of women from paid work for marriage also meant the ongoing creation of a reserve of temporary operators. Married women were sometimes used as strike-breakers and occasional help, but seem not to have exerted a downward pressure on wages to the same degree as in the very different circumstances of the garment industry, as described by Mercedes Steedman in "Skill and Gender in the Canadian Clothing Industry, 1890-1940," in Craig Heron and Robert Storey, eds., *On the Job: confronting the labour process in Canada* (Kingston 1986), 152-76. Comparison of the two industries suggests two different ways family roles may affect gender relations in different occupations.

workers resisted employer initiatives during the 1910s. But craft standards had another kind of importance, too. Within "the fraternity," operators themselves had a substantial measure of control over who received a certain reward of skill — that is, social status. And in determining an operator's status, issues of gender identity figured prominently. The fraternity achieved solidarity in part through excluding women from the select circle of the skilled.[62]

Craft standards had to do with the competencies of sending and receiving, and with the conduct of working relationships. Operators compared speeds of sending and feats of accurate receiving.[63] In addition, they discussed the "musical" qualities of a sender's style and the recognizable rhythms of each operator's work. They used terms like "clear," "firm," "nervous," or "staccato" to describe an operator's "fist," or style of Morse.[64] They told tales of phenomenal memory or ability to concentrate, the essential traits on which good receiving was based.[65] Long after typewriters had entered widespread use, they took an interest in "typically telegraphic" handwriting.[66] Operators also took pride in their role as carriers of vital, often-confidential information. They knew the service they provided meant at times life or death.[67] Relationships with customers were not always easy, but a good telegrapher took care to handle customers well. Good manners with the public, as well as with other operators on the wire, were noted and appreciated.[68]

[62]The solidarity bred in the printer's craft culture shared with the telegraphers' unity the discordant counterpoint of gender exclusion: Ava Baron, "Gender and the social construction of work in the American printing industry, 1850-1920," paper to the Social Science History Association, St. Louis, October, 1986; Cynthia Cockburn, *Brothers: Male Dominance and Technological Change* (London 1983).

[63]*CTJ*, 20 (1923), 394; *CTJ*, 13 (1915), 134-5; McNicol Collection, Item 517, clipping from *Railroad Man's Magazine*, (July 1918), 422-3; McNicol Collection, Item 495, file 6, "Discussion on "A high-speed Printing Telegraph System," Discussant Ralph Pope, American Institute of Electrical Engineers, *Transactions*, (26 June 1914), 1902; "Vancouver CPR Notes," *T & T Age*, 14 (1 January 1894), 15; Questionnaire #1, answer #35.

[64]Brenton A. McNab, "Telegraphers, Rhymsters, and Poets," *T & T Age*, 19 (1 January 1902), 4; McNicol, *American Telegraph Practice*, 208-9 (an engineer's view of the rhythm of manual sending); "The Mistake Was One of Nature," *T & T Age*, 19 (1 February 1902), 65; Interview #1, tape #1, side B, 299-302, Interview #3, side B, 210-222, 309-315; Thomas Raddall, *The Nymph and the Lamp* (Toronto 1963), 196-7. Raddall's first job was as a wireless telegrapher just after World War I, before voice transmission on marine radio.

[65]Ned Kent, "What Came of being Caught in a Snow-Storm," in W.J. Johnston, 159; Interview #3, side A, 408-413, 417-425, 428, 443; McNicol Collection, Item 495, file 6, Discussant C.R. Underhill, 1899.

[66]McNicol Collection, Item 517. This file includes reports on contests as late as 1930.

[67]McNicol, Item 486, "Only a Telegrapher"; McNicol Collection, Item 98, Chalmers, 65; Interview #2, side A, 210-222; "Montreal District Council," *CTJ*, 13 (1915), 142; Questionnaire #1, answer #13; McNicol Collection, Item 410, file 11, "Telegraphy an Honorable Occupation [editorial]," clipping from *T & T Age*, (16 July 1915), 331.

[68]*CTJ*, 18 (1920), 498; *CTJ*, 20 (1923), 398; Questionnaire #2, answer #35; Miss J.J. Schofield, "Wooing by Wire," in Johnston, 95; Questionnaire #3, answer #39. See also note 26.

The telegraph labour process gave operators considerable opportunity to enforce these standards. Their most effective tactic was simply to avoid working with incompetent operators (whom they called "plugs" or "hams").[69] "Get another op" might be the last words one operator would be willing to send another who had offended his or her standards.[70] But clearly, not everyone could avoid the bad operators all the time. Various, subtler forms of disparagement also served as sanctions. For example, an operator, driven beyond the bounds of patience, might resort to "roasting" an obnoxious receiver.[71] To hasten a laggard sender, a fast receiver might send a peremptory, "Well, well...?"[72] Sometimes, all an operator could do was gently tease an inept co-worker about the illegibility of his or her sending, and hope a better effort would result.[73]

Operators also enforced craft standards in supportive ways, by encouraging good sending and receiving. Some would make a friendly game of roasting each other, when each claimed to be equally talented.[74] Warm congratulations would be conveyed to someone who had received a long transmission without breaking, or whose sending was particularly pleasant to follow.[75] Quite subtle tones of approval or disapproval could be conveyed in operators' conversation over the wires. As a result, many of the ordinary means by which people are rewarded or punished in social conversation were available to operators who never met face to face. And these sources of social rewards were supplemented by the social notes in union or trade journals, which sometimes made special mention of an operator's excellence.[76]

In urban operators' high pressure work, then, craft standards and their enforcement were the language of status and the means of its creation. Together, they formed a discourse of craft, grounded in the interdependence of operators' work, and well-suited to the formulation and expression of prejudice within the relations of daily work. For instance, judging the "musicality" of an operators' fist was to some extent a matter of personal taste. Whether or not an operator was recognized as a superior sender by such a standard could easily be determined by her fellow operators' general feelings about her personality or her sex. And those feelings could be given rich expression through the complex etiquette of telegraphy. Subtle snubs, systematic exclusions, friendly congratulations — all these and more were

[69]Interview #1, tape #1, side B, 333-344.

[70]Raddall, *The Nymph*, 167-9; Interview #3, side A, 376-383; Questionnaire #2, answers #27 and #28.

[71]Interview #3, side A, 448-464.

[72]McNicol Collection, Item 510, file 10, Phillips, clipping from *T & T Age*, (16 October 1909), 724.

[73]Questionnaire #2, answer #26.

[74]Interview #1, tape #1, side B, 303-307. Operators in the same office might have typing contests, too. Interview #1, tape #2, 322-327.

[75]Kent, "What Came of Being Caught,", 160; Raddall, *The Nymph*, 197.

[76]See notes 63 to 68.

available as informal means of establishing status hierarchies. Through such means, operators constructed their own associations between gender and skill.

To a large extent, these associations followed the predictable schema of patriarchy. Praise and criticism were offered in gendered terms. For example, a poet operator likened the skill of a group of his fellow Montreal operators to the loyal courage of Horatio and his men defending the gates of Rome.[77] This was an image of men doing men's work, an image which situated superior accomplishment squarely in an archetypically masculine experience — armed combat.[78] The prevalence of such images indicated a shared view (among male operators at least) that skill was masculine. Even when women operators were praised, this general truth was affirmed. So, for example, women operators might be congratulated for having done "a man's work."[79] Or, a competent woman operator might be noted as an exception or an affront to the normal order. As one former operator said, "Well, I hate to admit it, but the best operator I ever worked with was a woman."[80]

This comment captures an important feature of the interplay of skill definition and gender definition: exceptions to patriarchal expectations could be acknowledged in such a way as to preserve the pattern. The fact of the woman's competence was still clear in this man's mind, when I interviewed him 40 or more years after he worked with this woman. He remembers that her work was fast, clear, and accurate. But the fact retained its special importance because of its strangeness. It was not strange by virtue of there being a woman operator at all; the same man observed that "there were women operators all over." The oddity lay in the combination of "best operator" and "woman operator." He was quite likely surprised initially when he discovered the sex of this excellent operator, and to this day, he prefaces his recollection of her with the expression, "Well, I hate to admit it..." And he not only made precisely the same comment on two separate occasions. On both occasions, he followed his discussion of "the best operator" with two more stories about women operators — both of these focusing on the women's errors and ineptitude.[81]

This operator was not alone in his reluctance to link women and skill unreservedly. He spoke not only from the broad tradition of patriarchy, but also as part of the occupational culture which was expressed in telegraphy's many internationally circulated trade publications. In poems, essays, and short stories, telegraph operators reflected on the troubles and joys of their profession. These reflections often centred on admiration of skill or exasperation with incompetence. When themes such as these were developed in narratives concerning men and women,

[77]McNicol Collection, Item 486, *Early telegraph poetry, 1896-1908*. The poem is a direct imitation of Thomas Babington Macaulay's "Horatius" in *Lays of Ancient Rome*.
[78]McNicol Collection, Item 486, *Early telegraph poetry, 1896-1908*.
[79]McNicol Collection, Item 510, file 10, clipping from *T & T Age* (16 October 1909), 725.
[80]Interview #1, tape #1, side B, 448-455.
[81]Interview #1, tape #1, side B, 455-472, and author's notes.

the relationship between gender and skill was addressed. For instance, the "story problem" was sometimes the contradiction between sexist ideology and women operators' actual competence.[82] Alternatively, some telegraph writers focused on the problem of gender difference being obscured in operators' work relationships. Against the assumption that men and women were different in almost every way was posed the telegraphers' experience of encountering "disembodied" co-workers, whose sex was not discernable. For some writers, this situation presented opportunities for humourous romance plots, in which laughter was to be evoked by mistaken gender identification.[83] Others insisted that criteria other than biological sex allowed them to distinguish infallibly between women and men. Some implicitly or explicitly denied the possibility of skilled women, but there also were dissenting voices and alternative visions.

An explicit example of the tensions concerning the relation of gender and skill can be found in a set of 1902 magazine articles. In *McClure's Magazine*, Mr. L.C. Hall claimed that "A woman's Morse is as feminine as her voice or her handwriting." The *Telegraph Age* editor agreed: "I have often put to the test my ability to distinguish between the Morse of a man and that of a woman, and only once have I been deceived." He described that one incident, saying that the operator seemed to be a man because "his" Morse was very fast, and also "clean-clipped and musical, though it had a harsh, staccato ring which indicated a lack of sentiment and feeling in the transmitter." He was mortified, he wrote, to discover later that he had mistaken the sex of the sender. However, when he met the young woman, he was comforted to find that she was, by his categories, a "masculine" young woman. His conclusion was that "nature, and not I" had made the mistake.[84] Masculine skill had been put in a female body.

The article in *McClure's Magazine* provoked an outraged response from a woman operator in Montreal.[85] The burden of her protest, expressed in delightfully salty terms, was that men operators used distinctions between men's and women's styles of sending to impugn women operators' abilities. She expressed mock pity for men "doomed to receive unmusical feminine Morse," but speculated in tones of heavy irony as to why these men, supposedly secure "in their exalted position of super-excellence... use precious time and strength in attacking the less favored female race."[86] Not only did she object to the arrogance behind such attacks, but she also insisted that the supposed differences on which they were based were

[82]For example, Ned Kent, "What Came of being Caught."

[83]"L.C.H.," "Flirtation by Wire," *Telegraph Age*, 14 (1894), 5-6.

[84]*Telegraph Age*, 19 (1902), 65.

[85]This protesting voice was unique in clearly originating in Canada. Others, focusing on equal pay for equal work, sexual harassment, and "male iniquities," surfaced in American publications: Graham Taylor, "The Industrial Viewpoint. Women Telegraph Operators," *Charities and The Commons*, 19 (5 October 1907), 864; *CTJ*, 5 (August 1907), 847-8.

[86]*Telegraph Age*, 19 (1902), 96.

complete fabrications. Fundamentally, the issue was not simply whether "women's Morse" was identifiable, but whether an ideology of gender difference and male superiority would deprive women operators of one of the rewards of their work — peer recognition.

IV

Technological change and the redefinition of skill

BY THE 1910s, changes in the telegraph industry affected the organization of work, supported the use of new technologies, and consequently brought skill definitions into a new focus. Telegraphy's days of rapid growth were past. In 1915, for example, GNW had only about 3,000 more miles of wire than it had had in 1902, and that wire was strung between fewer points: pole mileage had dropped by half.[87] The managers' watchword was "efficiency." The priority was to cram as much signal as possible onto the circuits at any given time. Even the usual length of the spaces operators left between code elements came under scrutiny, because these constituted "dead time" on the circuit.[88] More and more, the cantankerous duplex and quad circuits came into use.

Increasing the rate at which messages were processed was another of management's priorities. Redundant elements were omitted from the conventional signals used in sending messages.[89] Typewriters, whose productivity-enhancing benefits had been embraced by operators in the 1890s, became mandatory equipment by the 1910s (and operators had to supply their own machines).[90] The pressure on operators was heightened by the more-frequent business use of "cipher" telegrams, in which numbers represented the words of the message, with some ciphers allowing the abbreviation of conventional phrases. Sending data of this sort

[87]CPR's pole mileage, by contrast, had increased by almost 50 per cent. The GNW figures, however, reflect more correctly the change in the commercial telegraph industry, because they are not, as are CPR's, related to railway development. John Murray, *A Story of the Telegraph* (Montreal 1905), 119-20; *Sessional Paper 20f* (1913 and 1916).

[88]Donald McNicol, *American Telegraph Practice* (New York 1913), 208-9.

[89]McNicol Collection, Item 495, *Mechanical and printing telegraphy*, "Discussion on "A High-Speed Printing Telegraph System," *Proceedings*, American Institute of Electrical Engineers, Discussant Ralph W. Pope, 26 June 1914, 1902.

[90]McNicol Collection, Item 486, *Early telegraph poetry, 1896-1908*, (various poems about "mills" and "sheens" — slang expressions for "typewriters" — discuss both the usefulness of typewriters and the difficulty of having to buy one); U.S. Bureau of Labor, *Investigation of Western Union and Postal Telegraph-Cable Companies* (Washington 1909). [McNicol Collection, Item 207], 38-9. American companies seem to have made this requirement before Canadian ones did. As late as 1915, a GNW official felt it necessary to inform the Dominion School of Telegraphy that "The typewriter is taking a very prominent part in Commercial Telegraphy and it is necessary that operators be familiar with its use in order to secure good positions." Dominion School of Telegraphy and Railroading, *Prospectus* (1917), 20.

required that operators work at half their ordinary speed, to ensure accuracy. The customer paid for fewer words, but the operator took twice as long to transmit the message. The telegraph company lost money, the customer saved, and the operator's productivity dropped.[91] Operators attempted to increase their speed by using "semi-automatic" keys, which reduced the physical labour of sending.[92] And while operators themselves attempted to maintain their productivity, they were subjected to greater monitoring and enforcement of productivity by scientific management measures such as bonus systems and time clocks.[93]

The early years of World War I also saw the first important commercial use of automatic telegraph systems in Canada. Their use was limited to the busiest, best-quality circuits. By 1917, automatic printers handled between one-third and two-thirds of GNW's traffic at Toronto, Montreal, Ottawa, Quebec, Winnipeg, and Saskatoon; CPR had a similar number of automatic circuits.[94] A small but significant new sub-group of telegraph operators had come into existence: automatic printer operators, almost all women. They operated unstable equipment on busy circuits; the machines required four operators at each end of the circuit, plus support from special mechanics.[95] With the cost of separate supervision added to their expenses, the telegraph companies needed operators who could be paid low wages. Young women and some young men were hired. Over all, they were only about two per cent of the telegraph labour force, but no one could say for sure how far or how fast the use of automatic printers would grow. If anything was certain, it was that the automatics would usurp the top-quality circuits on which Morse operators had formerly performed their greatest feats of fast sending.[96]

[91]D. McNicol, "Speed of Morse Telegraphy," *Telegraph Age* (16 July 1907), 394.

[92]These keys, called "bugs," were invented in the first decade of the twentieth century. With a bug, the dots and dashes were not produced by individual vertical movements of the key. Rather, a continuous series of dots were made by the bug's mechanism when its lever was pushed to the right, and when the lever was pushed to the left, a continuous series of dashes would be produced. The operator would hold the key to the right until the required number of dots had been sent, or to the left until enough dashes were made. Thus, for three dots or three dashes, only one operator movement would be required. Moreover, the kind of movement required was less stressful on forearm muscles than that required by the traditional Morse key, and thus protected against the paralysis of "telegraphers' wrist." The bug was widely agreed to be a boon to the operator. McNicol, *American Telegraph Practice*, 208. McNicol Collection, Item 495, files 1a, 1c, and 1d.

[93]On time clocks in Canada, *CTJ*, 13 (1915), 143; on bonus system in Canada, Interview #1, tape #1, side A, 304-307, 312-321; Interview #3, side A, 551-554.

[94]*Labour Gazette* (hereafter *LG*), (October 1917), 793-4; McNicol Collection, Item 483, *Canadian telegraph and telegraphers*, clipping from a CPR annual report, n.p.

[95]*T & T Age*, 37 (1 August 1919), 369; *T & T Age*, 38 (1 July 1920), 371; *U.S. Commission on Industrial Relations*, 9397, 9409; *LG*, (October 1917), 803.

[96]J.F. Skirrow, "A Few Comments on Printing Telegraphs and Morse," *T & T Age*, (1 April 1919), 162.

In this context, the meaning of fast sending began to change. Morse operators could not deny that, under appropriate conditions, more messages could be handled and circuit capacity could be used best by the automatic printers. In a comparison based solely on maximum speed under ideal circumstances, the Morse system would lose to the automatic printer.[97] But Morse operators could, and very quickly did, argue that their "skill" consisted of competencies other than merely endless, high-speed key pounding. In their union journal and in conflicts with employers they argued that their most important ability was understanding the content of the messages that passed through their hands. Such understanding was the only effective way to catch the occasional inevitable errors that resulted from line problems or illegible handwriting. They believed that they noticed errors while receiving Morse, automatically fixing or checking on anything that seemed wrong. Automatics, they said, were not only more prone to introducing errors through circuit problems, but noticing errors was not an inherent part of operating the printers. The receiving operator did not interact with the sender directly, so feedback and verification could not be immediate. Instead, messages were proof-read after the strips of printed tape had been glued to the message form. They claimed that errors thus either went undetected or took more time to correct. They also argued that the Morse system was more "flexible" than the automatics. By this, they meant that Morse operators were able to assess and compensate for the sudden and frequent variations in circuit conductivity, variations which would put printers out of service.[98] Thus, they claimed, in the real conditions of most offices, the Morse operators' care and judgement gave them a productivity rivalling that possible on the printer system.

The emergence of automatics was only part of the reason for operators' new emphasis on the intellectual components of craft skill. Anger at the forced pace of their work also led to questioning the value of high speed output. Even though there was a certain pleasure in pouring out a rapid torrent of fluent Morse, to be required to perform continually at top pitch pushed operators toward nervous collapse.[99] To engage in the occasional friendly "roast" was vastly different than to produce at maximum speed under the daily stresses of a job. Voices both within and outside the union decried operators' superhuman efforts. One non-union observer suggested that pride and greed were the downfall of a man who, through overwork, succumbed to tuberculosis and died at age forty-one.[100] Unionists were more

[97]Even engineers who disagreed about the over-all value of printing telegraphs agreed on this point. See McNicol Collection, Item 495, file 6, John H. Bell, "Printing Telegraph Systems," Paper presented to the American Institute of Electrical Engineers, 19 February 1920, 57-79; and Skirrow in *T & T Age*, 162.

[98]*CTJ*, 13 (1915), 123; *CTJ*, 13 (1915), 127; *CTJ*, 18 (1920), 522, 523; NAC, RG 27, vol. 342, strike 24, *New York Times*, 18 March 1929; Skirrow in *T & T Age*, 161.

[99]For a summary of operators' stress-related health problems, see "McElreath Testimony" and "McElreath Exhibit No. 1," *U.S. Commission on Industrial Relations*.

[100]*T & T Age*, 19 (16 November 1902), 479-80.

sensitive to the possibility that financial need, rather than greed, might motivate operators to work two jobs and push themselves to their limit on bonus wires.[101] But thinking in collective terms, they pointed out that fast senders injured not only themselves, but other operators, too. As one press operator wrote: "Why set an exaggerated pace for himself and his fellows by sending in outlandish wire reports?... Why the 'bunk?'"[102]

Wanting to be a "star" no doubt explained some of the "bunk." But such a motivation was shaped by more than simply individual psyches. Telegraph companies had a substantial interest in getting the most work out of the fewest employees, so they played up to the operator's pride by publicizing exceptional feats of message handling. Noting an example of Western Union's honouring of high productivity, a Montreal unionist commented: "Did these poor simps imagine any one in Canada would be interested in their throat cutting contests?"[103] And indeed, CPR operators had succeeded in having a reasonably objective and moderate productivity standard included in their 1910 contract.[104] The critique of "speeditis"[105] was a rational one with considerable appeal to operators committed to lifelong work in the industry. But motives that led operators to drive for speed were not always rational. It is clear that high productivity and, especially, fast sending imparted a special pleasure to some operators. Many, perhaps most, of these were young men, those whom an Ottawa operator had scornfully called "'ambitious' juniors."[106] Such operators were the sort who adjusted the mechanism of the semi-automatic key at a speed greater than they could competently control.[107] They were the sort who would "roast" another operator just for "fun."[108] Undoubtedly, they were the sort who would spend their leisure time practising the set pieces used in tournaments, developing their ability to send what a senior telegrapher scornfully called "tournament Morse," distinctive for its illegibility as well as its

[101]*CTJ*, 2 (1904), 1; *CTJ*, 18 (1920), 534-5. Union membership went from about one-seventh of all Canadian operators in 1907 to one-third by 1919. The 1907 figure for total number of operators is an estimate. *CTJ*, 17 (September 1919), 4137-8; Dominion Bureau of Statistics, *Telegraph and Cable Statistics*, 1917-1931.
[102]*CTJ*, 13 (1915), 136.
[103]*CTJ*, 13 (1915), 143.
[104]*LG*, (August 1910), 187.
[105]*CTJ*, 13 (1915), 136.
[106]*CTJ*, 13 (1915), 144.
[107]McNicol Collection, Item 495, file 1c, J. Rosenbaum, "Adjustment of Semi-Automatic Transmitters," clipping from *T & T Age*, (16 March 1920); no author, "Semi-Automatic Morse Transmitters: Adjustment and Operation," clipping from *T & T Age*, (1 November 1920).
[108]Raddall, 167-9; Interview #1, tape #1, side B, 303-307; Ned Kent, "What Came of Being Caught," 160.

speed.[109] In short, operators who set the fastest pace wanted to prove their superior competence more than they wanted a relaxed and cooperative working life.

While women or men, young or old, might have had such a bent, it is surely not coincidental that examples of the enthusiastic speed demon in the telegraph trade magazines and literature were all young men. Displays of skill affirmed masculinity because superior skill was understood to be based in allegedly male physical traits — nervous stamina, muscular strength. While it is certainly rational (in the sense of beneficial to one's interests) to claim masculinity in a patriarchal society, proving gender identity has an importance beyond material interests. The desire to prove oneself a man (or a woman) is often, simply, compelling. Young male operators' commitments to proving their superior gender identity must have been a formidable barrier to their accepting unionists' more purely rational critique of speed as the defining feature of skill.

For men committed to union principles, the proving of masculinity through ever-speedier work was clearly a self-destructive game; manhood could better be shown in resolute defense of one's rights to organize and to control the pace and conditions of work.[110] Unionists had rejected the gender-biased biological definition of skill, recognizing that new productivity pressures and automation made stamina no longer either a healthful or an effective basis for skill claims. From this perspective, gender differences in "telegraphic capacity" lost their importance. Both men and women could benefit from the definition of skill as a cooperative exercise in clear communication. Unionists contended that, rather than being rewarded for star performances in nervous endurance, operators deserved full-time pay for eight-hour days. In making this speed critique, unionists affirmed that what was valuable about telegraphers' work were the diverse competencies of craft, and not merely volume of output. A certain link between masculinity and skill had been abandoned.

In the course of the 1917 strike against GNW, precipitated in part by the advent of the automatic printers, the union successfully enforced their new definition of skill. The company had proposed that Morse operators' wages be based on which wires they worked, with the wires being classified by volume of business typically carried. This was essentially the old productivity standard. By contrast, the union proposed that the operators, not the wires, be classified. The basis for classification would be the "importance" of the work each class of operator could handle. "First

[109]McNicol Collection, Item 510, *Telegraph and radio sending and receiving contests*, file 10, clipping from *T & T Age*, (1 October 1909), 676; McNicol Collection, Item 517, *Telegraphers' penmanship* (1918), George Barnes Pennock, "A Practical Telegraph Tournament," typescript.

[110]I want to emphasize here that gender identity was both a means of organizing consent to individualistic productivity goals and a rallying point for union solidarity. The conflicts between union men and anti-union workers in the early twentieth century might usefully be analysed as points at which tensions within masculinity emerge in social conflict or perhaps as struggles between different masculinities.

class men" might not work on the busiest wires, but would always be necessary to handle such wires when the printers' capacity was exceeded, or when the printers malfunctioned. The most-senior and most-competent workers were entitled, they argued, to the highest degree of job security and the best wages, regardless of the specific volume of work they might do. They were willing to negotiate on the percentage of jobs to be designated as first, second, third, and fourth class, but they insisted on their own, rather than the company's, basis of classification.[111] Morse operators had responded to automation by redefining skill as the workers' learned competencies, not the workers' productivity. Whether or not their work required full exercise of their competencies, they claimed the right to be paid for being skilled. In Cynthia Cockburn's terms, they had come to base their skill claims on "skill in the worker" instead of "skill in the job."[112]

In this new definition of skill, the link to masculinity was not the worker's stamina-based productivity but his accumulated store of knowledge. Drawing its association with masculinity in part from the fact that most of the senior operators were men, the Morse operator's work was distinguished as "skilled" and "masculine" in opposition to the labour of the new female printer operators. These women rivalled the Morse operators' productivity, but were not required to know Morse code or any of telegraphy's specialized ciphers. Underscoring this distinction was a substantial wage differential, favouring the Morse operators. Securing this differential in a wage schedule ensured the equation of masculinity and skill.

In their 1917 strike, the union failed to protest seriously the low wages printer operators were paid. Admittedly, the CTUA fought the company's attempt to exclude automatic operators from the negotiated wage schedule. However, this was clearly a strategic necessity. If the high cost of automatic systems was the chief barrier to their wider use, then maintaining some union control over automatic operators' wages would reduce any threat the technology might pose.[113] There appeared to be little danger that printer operators would become a majority of CTUA members and threaten "petticoat rule."[114] In these circumstances, a chival-

[111]*LG*, (October 1917), 793-4.

[112]Cynthia Cockburn, *Brothers: Male Dominance and Technological Change* (London 1983), 112-4.

[113]Opinion among electrical engineers and telegraph company managers was divided as to the economies and scheduling advantages of automatic systems. Most agreed that the Morkrum automatics were the best available, but debated whether these were good enough. One of the two major American firms, the Postal (which would ultimately become International Telephone and Telegraph) abandoned the automatics entirely in 1919, after having used them for about nine years (*T & T Age*, 16 February 1920, 110). A Postal engineer concluded his critique of automatic printers with the opinion that "the Morse system will continue to be the principal reliable and economical standby for many years to come." (*T & T Age*, (1 April 1919), 162).

[114]The expansion of employment for women in clerical jobs and the telephone business reduced the supply of women available for telegraphy work. The phrase "petticoat rule" is

rous self-interest dictated the inclusion of the automatic operators.115 It did not, however, require demanding that the "girls" get equal pay for work of equal value. The pervasive assumption that women operators were somehow inferior made the creation of this new low-paid, low-status niche seem "natural" for women.

The conclusion, then, must be that in the telegraphers' case, the experience of shared labour did not generally and fundamentally alter either these workers' ideas about gender and skill, nor close the gap between women's and men's wages. The main reason was the degree to which gender segregation could be sustained within this complex industry. Among its diverse branches were situations where women seemed to belong, according to sexist assumptions about low stamina, lesser wage entitlements, short working careers, and patience with the public. A combination of more or less subtle dynamics guided most women operators into these apparently-appropriate branches of the business. As a result, men and women might, for example, work together on a press circuit, but the women were likely to be among the many receiving operators rather than the one sender. Such working relationships presented almost no contradictions to gender stereotypes.

However, even limited evidence of female competence was clearly a source of some perplexity and tension. Male co-workers or employers responded in three ways. Female competence might be regarded as exceptional, and praised as the ability to do "a man's work." Or, women's abilities might be seen as suiting them only for certain jobs deemed (rightly or wrongly) to be less demanding. And some men in the industry used subjective aesthetic judgments to deny women operators' skills. By these means, the evidence against the equation of masculinity and skill was discounted.

For the outcome to have been otherwise, people within and outside the industry would have had to organize specifically in support of women telegraph operators. By itself, cooperative labour shared by these women and men had little effect on the meanings they made of gender. Masculinity retained its promise of higher wages and superior status. When the fulfillment of this promise was jeopardized by technological change, unionists distinguished themselves from the automatic operators, and forced employers both to reaffirm the entitlements of skill and to entrench gender hierarchy in the industry. In this new class rapprochement, Morse telegraphy became, more than ever, "men's" work.

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taken from the telephone industry, where female takeover was a concern of the International Brotherhood of Electrical Workers, according to Jack Barbash, *Unions and Telephones: The Story of the Communications Workers of America* (New York 1952), 4, quoted by Joan Sangster, "The 1907 Bell Telephone Strike: Organizing Women Workers," *Labour/Le Travailleur*, 3 (1978), n. 85.

[115]The posture of protective elder brother implicit in some telegraph unionists' tactics (for example, NAC, RG 27, vol. 307, strike 122, "Orders the workers to be taken back," *Ottawa Citizen*, 25 October 1917) resembles a similar stance by male organizers in the garment industry during the early-20th century, as noted by Steedman, "The Clothing Industry," 162-3.

A note on sources: The interviews and questionnaires referred to in the notes are those I conducted with six former telegraph operators — two women and four men. Interviewees answered the same questions as those given in the questionnaire, as well as sharing their own recollections. All but one of the respondents had worked as an operator between 1917 and 1930; one man's experience was in the late 1930s. The three-digit numbers in interview citations are tape-counter readings. (Interview tapes and questionnaires are in the author's possession; inquiries are welcome.)

The McNicol Collection referred to is "The McNicol Collection of Books on Telegraphy, Telephony, and Radio," held in the Special Collections of Douglas Library, Queen's University. It was compiled by Donald McNicol, a telegraph operator who later became a telegraph engineer, a radio engineer, and an executive of RCA.

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