From Mangle to Microwave: The Mechanisation of Household Work *by Christina Hardyment*
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Domestic applicances are a frequent focus of discussions about the benefits, or otherwise, of technology. Yet the subject receives scant attention from the technology studies field, compared with technologies destined for use in the industrial arena. There has, in fact, been a steady stream of research on household technology, motivated in the first instance by the obviously feminist concern of why technology has failed to liberate women from domestic drudgery. (For the uninitiated, many women today spend the same if not more hours in domestic labour as their foremothers a hundred years ago. There is an element of housework 'expanding to fill the time available', but there are other considerations: domestic labour is no longer shared with other household members; and some tasks — shopping and childcare, for instance — now consume considerably more time than in former years.)

This research confirmed the inappropriateness of standard labour process analysis to work performed in the home, and so highlighted the need to understand the role of sexual as well as economic power relations in 'shaping' domestic technology. A more sophisticated approach to this shaping question has focused on 'women as market' as well as 'labourers'. This addresses both the impact of prevailing norms of home life on the product development and design efforts of manufacturers and also the influence of those producers (and their marketing wings) over those norms.

From Mangle to Microwave: The Mechanisation of Household Work is an excellent contribution to this tradition of research. The book is "largely a celebration of the innovatory inventions — some lunatic, many inspired — which transformed domestic labour between 1851 and 1951." It originated from a personal collection of early domestic appliances — sewing machines, washing machines, irons, stoves and a range of bathroom as well as kitchenware. In each case the author draws on painstaking surveys of producer and user publications of the period to yield a richness which is often lacking from more broad brush treatments. She looks at those machines which do not have latter day counterparts as well as the more familiar ones, and provides very real insights into the perceptions of both the producers and users of these early machines.

The period covered by the author culminates in the development of mass markets for the ubiquitous 'white goods'. (The author lost interest in these machines: "Flimsy, imperfect, over-styled, they no longer seemed worth admiring.") The context is the movement of specific production and service activities between the home and the monetary economy outside. The historical trend — with the dual forces of industrialisation and urbanisation — was for work to shift into the 'productive' sector; thus the early attempts to mechanise sewing and laundry were developed for industrial, not domestic, application. Once mechanised, both of these activities moved back into the home. At the same time, there were sustained efforts to apply industrial means of power to domestic tasks. When steam engines proved impractical, the 'handle turning age' entered the home — only to be superceded by the 'push button age', once mains electricity became widely available.

Naturally, early machines were only affordable in wealthy homes. Initially intended to lighten the burden of domestic servants, domestic technology came

to be seen as a replacement for them — a powerful solution to the 'servant problem'. The dwindling numbers willing to work in domestic service reached crisis proportions by the end of World War I, by which point other job options — in offices, factories and schools — offered better pay and prospects. At that point, the number of married women in paid employment hit an all time low, and the notion of 'housewife' as a proper role for women took hold. According to Hardyment, the concept of the 'mechanical servant' distorted the development of labour-saving devices and, coupled with the development of the small electric motor, "led to the development of domestic machinery along sadly isolationist lines."

An alternative line of development was feasible: domestic service could have developed outside the home on a more professional basis. Hardyment argues that this option might well have been pursued at the turn of the century when it was widely canvassed by feminist and community movements. Indeed, the author views the fact that laundry never re-entered the monetary economy (the way sewing did with the mass production of clothes) as a mere 'historical accident'. One should perhaps be a little more circumspect. The preceding decades had seen an ideological onslaught to the effect that the prevailing aspirations of both working class and middle class women came to be 'hearth based'. Thus, as Hardyment herself notes, the market was not prepared to pay more competitive rates for domestic services since increasingly the female heads of households were prepared to 'do' it for free.

An important factor, somewhat understated by the author, is the low status attached to domestic tasks by the end of the nineteenth century. The domestic science movement, which in effect replaced domestic service as training in housewifery, did much to elevate women's perception of domestic labour — as well as diverting feminists from pursuing the more 'collectivist' avenues favoured by Hardyment. Scientific management proved rather meaningless in a situation where boss and worker are one, and unpaid. However, the application of scientific principles — notably the 'germ theory' of disease — to domestic tasks served to elevate standards of hygiene and efficiency. In this way, the domestic science movement helped develop mass markets for household appliances.

New marketing methods were devised to address this specifically female group of end users: the employment of women demonstrators by the Singer company was pioneering at a time when men were widely held to have the prerogative over machinery. (Singer also pioneered the use of credit to sell domestic appliances.) Advertising really took off in the 1920s, reflecting and reinforcing the image of the 'new ideal housewife', just as the machinery itself was increasingly tailored to the assumption of this role. In some cases, the manufacturers made a direct challenge to domestic norms: one early advertisement for a washing machine included the line, "Don't pity the woman who does her own washing. The pity is for you."

A strength of the analysis provided by this book is that it emerged from the historical study, rather than being imposed on it: "it proved impossible to ignore the message driven home by studying the development of domestic technology . . . Some massive opportunities have been missed in our efforts to relieve domestic drudgery over the last hundred years." Evidence of this lies in the consistently greater reliability and efficacy of industrial machines over their domestic equivalents, but there are also specific instances when particular lines of development — not least the 'handle turning' devices — could have

been pursued further than they were. For Hardyment, however, the biggest missed opportunity was the failure to remove domestic service completely from the home and thus obviate the housewife role: "Such a life resembled nothing so much as that of a garage attendant, providing services in the shape of food, clean clothes and a neatly made bed to her passing family instead of oil and petrol to passing cars."

Looking to the future, Hardyment sees the seeds of change: "Wives no longer want to be lonely garage attendants, however glamorous the setting of the pumps." Ideology concerning appropriate female aspirations is in a state of flux now that half of British mothers are in some paid employment. These are signs of a move back to external provision of domestic services — most notably in the greater availability of prepared meals outside the home. At the same time, men are becoming more involved in many areas of domestic labour — childcare, gardening and home maintenance/DIY (though not noticeably in the more mundane and routine cleaning tasks). Significantly, too, "the boom days are over" for the producers of domestic machinery since most of the important markets are saturated or near saturated. In this situation, perhaps, the consumer has some influence over the future development of household technology — but which consumer?

These issues are of continuing interest since the household is an obvious focus for new product development in the information and communication technologies. Whether these technologies are applied to the nominally female areas or to the expanding pursuit of 'leisure', gender relatons — in all their complexity — will be a major determinant in the shaping process. This said, Hardyment's book has an appeal that extends way beyond those with a 'theoretical' interest in household technology. Her passion for the various gadgets and devices she describes is matched by a writing style to produce an account of the people and times which is full of both wit and empathy. In short *From Mangle to Microwave* is a good read!

Wendy Faulkner
University of Edinburgh

International Business in the Nineteenth Century: The Rise and Fall of a Cosmopolitan Bourgeoisie *by Charles A. Jones*
(Wheatsheaf Books, Brighton, 1987) pp. xi + 260, ISBN 7450-0399-0

Despite its broad ranging title, this book does not attempt, nor indeed could any single volume satisfactorily address, such an ambitious study without substantial qualification. The author does not claim an intensively analytical investigation into the economic bases of how international business was conducted during the nineteenth century, and neither does he pretend that economic determinism is the only explanatory approach as he makes plain in his very thoughtful introduction. Certainly these opening 26 pages adequately lay down the ground rules and, for this reviewer at least, satisfactorily justify the volume's seeming shortcomings. The author succeeds in presenting a fascinating account of the rise and fall of a cosmopolitan bourgeoise, which