



Working Women's Information Service

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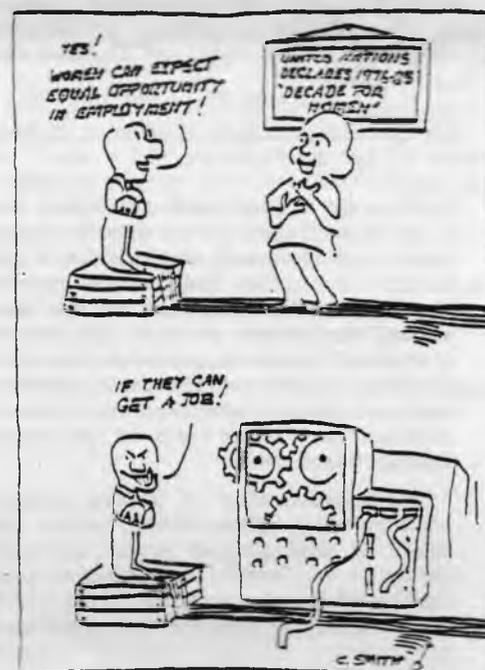
TECHNOLOGY & EMPLOYMENT - PART I : WOMEN'S JOB DISPLACEMENT

It is hardly surprising that the question of technological change is being hotly debated by society for it appears as a double-sided coin. Its promise to emancipate humankind from tedious repetitive labour is clouded by its threat to deprive workers of the paid labour on which their livelihood depends. Most of the documentation produced so far agrees that in Australia women and youth will bear the brunt of job displacement and unemployment figures suggest that they are already doing so. The overall rate of unemployment in March 1980 was 6.2 per cent whilst for women it was 8.1 per cent and for young females 18.1 per cent.(1)

It would be a mistake to attribute these trends to technological change alone. Indeed one of the greatest problems with analysing the effects of this change in employment is the difficulty of isolating each of the influencing factors and accrediting it with its portion of blame. There is no doubt that international and local economic trends are playing a large part in creating unemployment but it is also true that these trends are driving industry and commerce towards a rationalization of costs in their search for increased profits and that technological change plays a large part in that rationalization. Viewed in this light, the need to separate and quantify the various factors involved in creating unemployment loses its significance for it becomes clear that technological changes are part of the economic forces which are causing unemployment. Therefore we do not need to quantify the exact number of jobs lost directly by technological change. Instead we should concentrate on the aspects of technology which affect employment in the context of the overall economic situation and in this way develop an understanding of the dangers faced by employees.

These dangers loom especially heavily over the prospects of women's access to the paid labour force and, if not checked, will make a sham of the equal rights and conditions won by women over the past ten years.

Much of the debate on technological change recognizes that women's employment will be highly affected but nevertheless it is usually content to ignore or fob off this problem as a mere casualty in the overall progress. Despite the advances made by women into the workforce in recent years, they are still seen by society on the whole as an insignificant feature of the economy and their right to work is regarded merely as licence.



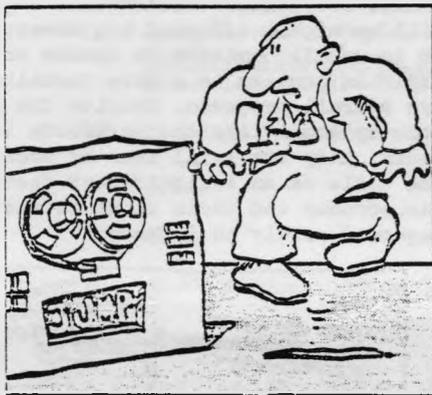
The ACTU Working Women's Charter says -

"The ACTU supports, consistent with its policy, the right to paid work for all who want to work, irrespective of age, marital status, sex, sexuality, race, country of origin, religion, political belief or appearance."(2)

If we are to take this declaration seriously we must oppose any threats to the full penetration of women into all areas of employment.

TECHNOLOGY USED TO REINFORCE SEX DIVISION IN WORKFORCE

The high rate of female unemployment at present can largely be attributed to the fact that new employment opportunities are increasingly found in the more skilled areas whereas women tend to be concentrated in areas of low skill. A recent study by the Tertiary Education Commission(3) showed that a growing trend towards the employment of skilled, rather than unskilled, persons was consistent across the whole occupational spectrum and was also reflected in individual job categories. In the white-collar area the growth in professional employment was rated as 52.6 per cent whilst for skilled white-collar workers it was 20.6 per cent and for semi-skilled only 18.5 per cent.



The same trends were reflected in the blue-collar area but even the highest levels of blue-collar skill have risen at a rate lower than that of the most unskilled white-collar workers. The areas of actual employment decline include telephone and telegraph workers, retail and electrical process workers, spinners, weavers and knitters - occupations which account for 75 per cent of the female labour force.(4)

The introduction of modern technology clearly accentuates these trends for it tends to deskill and reduce existing jobs while at the same time creating a smaller number of highly skilled occupations. The developing army of computer analysts, programmers and servicers is largely male whilst in many instances it is female workers whose jobs are being deskilled or are disappearing altogether.

BANKING

The computerization of banking is a classic example of the way technology is being used to deskill women's work. The number of women working in banking has risen considerably since the second world war.

At first they worked in restricted areas but gradually entered a wider range of jobs. Bank managers always rose from within the ranks of the bank staff and for men it was a career which ensured promotion provided performance was of average ability.

Employees were promoted from one section of the work to another, gradually working their way up the hierarchy. Women were just beginning to break into this career structure when the economy demanded that banks reduce costs to maintain their profits. The high labour intensity and the vast amounts of tedious paper work made the industry an obvious candidate for computerization. As soon as the machines began to arrive women were put on to the tedious job of operating them. The first machines kept the ledgers, a task which had previously been seen as highly skilled and was a step towards managerial status. With ledger-keeping automated, women were put to work operating the machines - a dead-end job which provided no overall banking skill - while men were able to bypass the whole area and thus climb the promotion ladder more quickly.

Now the machines have been made redundant by computerization but the same employment trends are reflected. The advent of the computer has resulted in much of the work previously done by branches being centralized in electronic data-processing (EDP) centres. Consequently there has been massive reorganization and rationalization of the work process and staffing arrangements in the branches.

EDP CAPACITY

The computers have a phenomenal labour-saving capacity. They can process about 100,000 transactions a day and are estimated to be 300 times more efficient than ledger postings. Those employed by the EDP centres are not seen as part of the bank career structure proper and fall into two main areas: a very few highly-paid skilled systems analysts and programmers and a large number of routine poorly-paid machine operators and process workers. The latter area is staffed entirely by women and the former almost entirely by men. The process workers are now totally cut off from the operations of the branches with absolutely no way of transferring into the career structure. The EDP centres are described in the industry as 'the factory'.(5)

Although the banks are not yet sacking staff, by reducing skilled female employees to unskilled processors, they are forcing women into the areas which are suffering an overall decline in employment.

TECHNOLOGY AND TRADITIONAL FEMALE AREAS OF EMPLOYMENT

Seventyone and a half per cent of the female workforce are employed in ten occupational categories out of a total of 53 listed categories.(6) Almost 60 per cent are employed in food, clothing and footwear manufacturing or in clerical, retail sales and health.(7) It is these areas which are currently being most affected by technological change in Australia. A further 16 per cent are employed in finance, insurance, real estate and public administration(8) and these areas are all in the process of becoming highly computerized.

In the clerical field women have been used mainly as typists, stenographers and processors of routine paper work such as insurance claims, filing etc.

WHERE HAVE ALL THE TYPISTS GONE ?

The nature of typing is changing as traditional typewriters are replaced by word processing units. It is claimed by the manufacturers of these units that one unit with one operator can do the work of four to six typists and can be purchased for \$10,000 or leased for \$33 per week, all of which is tax deductible.(9)

Publicity material distributed by Kevin Bridges Office Equipment Sales in 1978, advertizing the *Olympia* 'memory' typewriter, includes the invitation to "lease at approximately \$31 per week (just one fifth of a 'girl's' wages)".

The award rate for an adult typist/ clerk in June 1980 was \$181.50 per week. There is little doubt that word processors are being marketed with staff reductions in mind and it seems likely that they are being purchased to cut wage costs.

Word processors are small computers with an electric typewriter keyboard, a video screen, a storage station and a printer station for completion of documents. If a mistake is made in the body of a letter the operator simply rectifies the mistake on the keyboard and the machine automatically retypes the new amended document. According to the publicity, letters "can be done, provision made for variables to be inserted and stored in memory. It is then possible to have ready in seconds a highly personalized letter that is really a standard letter plus additions/ deletions/alterations".(10)

These machines can operate at 45 characters per second or 540 words per minute. A good average typist can maintain 60 words per minute. More sophisticated machines are able to bypass the need for a typist altogether as they can print directly from spoken words.

Machines are constantly being developed which are both improvements on existing models and cheaper to buy; so, with the current economic situation which is forcing rationalization of costs, we can expect an increase in the number of visual display units installed.

ELECTRONIC DATA PROCESSORS

It is not only in the banking industry that EDPs have made a serious impact on women's employment. These machines can store, collate, calculate and make accessible information relevant to a particular company or group of companies for whose needs it has been programmed.

A typical example of the use made of EDPs is a payroll system. The machines store all the information fed into them by punch cards on magnetic tapes, discs or cards. In the case of a payroll system this information would include records of employees, details of pay rates, overtime rates, holidays, superannuation payments etc. Any section of the information can be updated by feeding in information which is specific to one employee or general information such as a national wage case pay increase. The latter is automatically processed to update each individual wage rate. When a pay calculation run is made the machine prints out each individual pay packet complete with details of pay and the name of the employee. It also calculates the amount of money in specified notes and coins which the clerk will need to make up the pay. It can print cheques automatically, deduct any amount for banking, print a credit slip for that amount and print a tape notifying the bank of the amount credited to each account.



By courtesy
Women's Unemployment Rights Campaign

Systems such as these can be adapted to meet all sorts of needs and the potential amount of information which they can store and process is almost unlimited. The extent to which they are being introduced into industry can be gauged by a survey conducted by the Australian Bureau of Statistics which showed that 60 per cent of private enterprises with more than 80 employees introduced EDP equipment in the three years to June 30 1979.(11)

INSURANCE INDUSTRY

The effect of machines on employment is well illustrated by a review of changes introduced by Australia's largest insurance company, Australian Mutual Providence, which introduced its first computer in 1959. In 1967 the company employed 4600 administrative staff and in 1978 this number had risen by 100 (2.17%) whilst during the same period the number of policies handled had increased from 2.8 million to 3.2 million (50%) and the company's annual premium income tripled.(12)

If the company had continued to employ at the 1967 ratio of persons to policies an extra 657 jobs would have been available. In effect this suggests a loss of 557 jobs.

RETAIL SERVICES

In June 1979 a total of 337,900 women (18% of the total female workforce) worked in retail sales.(13) This is another area which has seen rapid technological change and in which we can expect to see more. Keith Windshuttle illustrates the effect which technological change has already had on the industry when he says "Computerization means that all purchases originate from head office and advertizing and sales promotion are centralized . . . This allows retailers to reduce floor staff to unskilled, often part-time workers on base pay rates and keep only a small coterie of management at head office to run all departments and branches".(14)

It is expected that fully automated checkout systems will be introduced into Australian retail outlets within the next twelve months. These systems operate by a scanning device which scans goods as they are passed through it at checkout points. The scanner reads a computer mark on the item purchased, prints out its cost and records its purchase. It can then automatically print out order slips for the store when required. Once these systems are installed stores will no longer need nimble-fingered young girls as fast check-out operators and packers. They will simply require one person to guide the products through the scanner so that the cashiers will be redundant and a packer will be able to feed purchases through the machine.

MANUFACTURING

In the manufacturing sector we find that the areas in which females are predominantly employed are those which are subject to the most technological change. In Australia women have been used in manufacturing industries which have a high labour intensity. These industries were able to survive for years without technological improvements because of the low wages paid to women employees and because of protective tariffs which have provided them with an uncompetitive market. However overseas competition and the economic realities of the 1970s have forced a reduction in these tariffs, thus throwing manufacturing industries into a crisis which could only be overcome by improving equipment and rationalizing staff or by using offshore labour. Both of these strategies have been invoked and mean a loss of jobs for Australian women.

In the clothing trade industries, for instance, there has been a decline of 13 per cent in female employment between 1971 and 1979, although there has been an increase in male employment of 9.1 per cent.(15) Technology has been largely responsible for this change in the ratio of men and women employed. Machines have been introduced which have reduced overall employment in semi- and unskilled categories filled by women but have created jobs of patrolling and monitoring which are usually given to formally trained men.(16)

During the last ten years women have gradually been allowed to share the cutting which was previously considered too skilled for them and which was the last bastion retained exclusively by men since women entered the clothing trade. However the introduction of machines which use laser beams and can cut a whole suit in five minutes is likely to put a stop to that trend. The number of cutters required must be drastically reduced.

CATERING AND HEALTH

In the area of catering very simple technology is being introduced which will displace women workers. One obvious target is the 'tea lady' - now almost a relic of the past. Personalized services have been replaced by automatic vending machines and the displacement is continuing. Australia Post recently recommend, in a review of its food services, that "every effort should be made to replace tea trolleys with beverage-vending machines within two years".(17)

Most women employed in serving tea to workers have had no formal training and have often sought the work because it was part-time and fitted in with domestic responsibilities. They are virtually unemployable anywhere else.

A new method of preparing and storing food for hospital patients has been introduced which chills food at 4 degrees centigrade, keeping it free from bacteria but enabling it to be quickly reheated in an infra-red-ray hood. This process enables a central kitchen to prepare large quantities of food for distribution to several institutions and greatly cuts down on staff.

An article printed in *Institution* in May 1978 said -

" . . . it is likely that chilled food systems will become an important part of food services in Australia in the future, particularly as we face a future in which rationalization and sharing of services in the health care system becomes more and more an economic necessity".(18)

The rationalization of health services is taking place throughout the industry. Nursing is becoming more and more reliant on machines to care for patients. The machines require technical people (who are usually men) to operate them. In order to maintain staff ceilings and balance the hospital budget there tends to be a reduction in the number of nurses employed. Thus the ratio of nurses to patients is reduced and nurses have less time to give personal attention to the sick.

The computerization of administrative services has introduced a new element into hospital management. Women who are attracted by the caring role of nursing tend not to specialize in administration whereas a high proportion of the men who are now entering this traditionally female profession do the administration course and scoop the senior jobs.

WOMEN'S RETRENCHMENT IS DISGUISED

When technological change is first introduced there is usually an overload of work while the equipment is being set up and staff are learning to use it. This is especially the case with EDPs which initially need to have massive amounts of information punched into them to make the programmes operative. However after a short period this load begins to drop off and staff needs gradually decline.

Often the staff reductions are disguised because an EDP system installed, say, for payroll can then be used for other information. Hence the period of increased work load is extended for a time but eventually it disappears.

NATURAL WASTAGE

The ABS survey referred to (p.4) showed that most of the employers who implemented technological change in the last three years relied on natural wastage to reduce their staff numbers.(19) Natural wastage means that employees who voluntarily leave their jobs are not replaced. Because women have domestic responsibilities they are more likely to leave their jobs. Thus even in industries where both men and women work side by side, doing the same work, it is more likely to be women whose employment is affected by the introduction of new technology.

In areas of women's employment employers are able to rely on natural wastage and can avoid retrenchments which might not be avoided if the workers were men. As a result women's jobs are lost quietly and 'invisibly'. In this way many of the jobs in the clothing trades have been made redundant. Very few sackings have taken place but, rather, jobs are vacated and simply not refilled. The 'invisible' nature of these job losses reinforces the vulnerability of women in the workforce for, if women are not seen to be retrenched, no-one can create an outcry about them. Instead women's unemployment rates grow silently and all sorts of justifications permeate society, diverting attention from the havoc being wrought by technological change used to displace women workers.



By courtesy "Premium" No.8 1977.

The advent of new technology has already increased the incidence of part-time work. Part-time work has often been considered inefficient because the continuity of work depends on the one person seeing each task through to completion. For example, an office filing clerk may have a filing system which she follows through and which, to a large extent, depends for its efficiency upon her continual supervision. The introduction of machines which are programmed to carry out certain tasks, to store information and to process routine enquiries will provide the necessary continuity which will be unaffected by any number of operators. Hence job-sharing may become a more expedient proposition.

In an economic climate which features high unemployment this expediency can appear very attractive. Firstly, it creates the appearance of more jobs and lessens the recorded unemployed. Secondly, it is frequently justified in humanitarian terms for it appears to distribute what work is available to many more workers. Thirdly, there are sections of the workforce who would welcome the opportunity to enjoy more leisure time and who are prepared to accept the necessary salary reduction.

However, when we look at the way part-time work has been used so far, we find that it is mostly females who work part-time. More than 34 per cent of all employed women work part-time whilst only 5.3 per cent of men are part-time workers. (20)

This situation has arisen because of the widely-held belief that women should bear the prime responsibility for the care of home and family and that paid work outside the home should take second place to unpaid domestic duties. These expectations of women limit their ability to become full participants in the work place and allow society to continue to depend on the unpaid labour of women to raise children and to meet the domestic needs of male workers.

Whilst we should not deny part-time work to those who want it, if we are serious about breaking down the sex role stereotypes in society and working towards a situation where women are seen as equal members of that society, we must guard against any attempt to force women to take part-time instead of full-time work - for it is their unpaid domestic labour which primarily denies them equality with men in the work place.



SUMMARY AND CONCLUSIONS

The preparation of this paper was hampered by the lack of information about the extenuated repercussions from the introduction of new technology, which has made it very difficult to make any longterm predictions. Although the Myer Committee of Inquiry into Technological Change received many submissions from representatives of employees about the immediate effects on their members, very little was received from industry. This in itself suggests that employers who are introducing new technology have little concern about its wider effects on society.

It is obvious from our research that certain groups of people are being more disadvantaged than others. In the short term they are those who lack particular skills and experience. In the long term they are likely to be those who have not had sufficient education to enable them to be retrained in the more complicated skills required by technology. In both cases they tend to be women - in the short term particularly young women and non-English-speaking migrants.

We have concentrated on the effect which technology has already had on women in the manufacturing, catering, health, banking and insurance industries and the contraction of opportunities but recently opened up for women in the higher clerical and administrative areas. These jobs are increasingly demanding specialized technical training which women seldom receive.

In the last sixteen years we have witnessed a substantial increase in the number of women entering the workforce. In March 1980 45.3 per cent of all women over the age of 15 worked(21) whereas in 1964 the figure was only 33.7%.(22)

Not only have working women increased in proportion to nonworking women but they have made moves into new fields of employment. The winning of equal pay and the establishment of Equal Opportunity Boards have created the structures which could enable women to have equal access to employment opportunities but those structures are not yet being fully utilized. Their very existence, however, reflects a change in attitudes towards female employment - but this change still has a long way to go.

Because their employment is still seen by many as peripheral to the economy and a negation of their so-called 'natural' domestic role, women remain a very vulnerable section of the workforce. The tendency to ignore the fact that women work means that they are likely to be overlooked in any re-arrangement of employment structures and they are in danger of being pushed out of the new fields into which they have recently ventured.

The very time when women are beginning to break into new fields is the same time at which technology is being introduced which could, if unchecked, totally reverse these advances.

The sex division in education and in the workforce has ensured that women are concentrated in the low-skill occupations which are most easily automated. Although there has, for some years, been a steady demand for experienced female workers which has absorbed large numbers of married women re-entering the workforce, ABS estimates for April indicate that a decrease of 11,000 from the total number of people employed in Victoria in March was largely confined to married women. The estimates also show that an improvement of 5,700 in the number of males unemployed was almost totally offset by an increase of 5,000 in the number of unemployed women.(23)

It seems that so far comparatively few workers have actually been retrenched. Employers who introduce labour-saving equipment depend, for the most part, on natural wastage to reduce their labour force. Because women are more likely to leave their employment voluntarily, for domestic reasons, their jobs disappear without trace.

Although the official rate of unemployment for women is 8.1 per cent, compared to 5.1 per cent for men(24), ABS figures on discouraged workers(25) show that the true rate for women is much higher. A further factor which camouflages unemployment among women is the rising number who have been put on to part-time work.

If women are to become equal citizens and realize their various talents, they must have equal access to the workforce. It is therefore vital that the trends presented here do not continue. Technological change could be used to the benefit of all society and to the benefit of women in particular, for both the domestic and paid labour which women undertake are tedious and repetitive and could easily be alleviated by technology. However any technology which is introduced in a period of economic stagnation must be viewed in that context and safeguards must be set up to ensure that it is used to enhance the quality of life and not to displace or deskill workers or simply to increase the repetitiveness of their jobs.

Technological change holds the potential to free workers, to increase community services, to lessen the working week and to allow all workers greater recreational and educational opportunities. It is towards the realization of this potential that it should be directed. It should not be used to force women from the jobs they have recently acquired.

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