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# Planning for a probability: The almost-workless world

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## Introduction

It would be difficult to overstate the influence exerted by the needs and demands of the world of work on other aspects of society. Work is both value and structure, activity and ideology, fact and myth. The generally accepted belief that work is good for people and necessary for society has shaped economic programmes, political platforms, educational and social welfare systems, and even relatively peripheral areas such as the correctional system and individual therapy. There is no generally acceptable method of distributing society's resources other than through job-holding, but this instrumental aspect of work has been overlaid with other values to the point that the person who does not or will not work is seen as a "sinner", a bad citizen, a poor patriot, and even as emotionally disturbed.[1]

Consequently, both willingness and ability to work, and success in finding work, are of fundamental importance to individuals from financial, social and emotional points of view. Simultaneously, the ability to provide people with jobs is one of the most important preoccupations of governments, even including those that are ideologically opposed to government intervention in the economy. However, both finding and providing jobs have become major problems for most Western industrialised countries and it is highly probable that the situation will worsen in the future.

With that in mind, we propose in this article to project some possible future scenarios concerning the world of work and to discuss their economic, political and attitudinal implications. Our focus will be the Western industrialised countries on the understanding, of course, that we cannot really project the future of these countries in isolation from the developing world and that, if we do so here, it is purely for heuristic purposes. On the other hand, such projections may serve to alert the less-developed nations to the dangers and problems inherent in following the course of the West to date,[2] or help them cope with their relationships with Western countries in the light of the anticipated changes.

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But first some general remarks. Predicting the future – and for how far ahead? – is a risky business. Both Fiedler and Striner point out the dangers, albeit facetiously.[3] Since the world of work is the arena in which this article will project change, it might be well to speak of the changes that will probably take place in that arena during the working lives of people now entering the workforce, rather than by the conventional "year 2000". If people beginning work today at the approximate age of 20 retire at roughly 65, they will have worked until the year 2030. The changes projected in this article, then, are those that can be expected between now and that date.

The tools for projecting the future have been categorised as extrapolations, analogies, simulations, technology assessment, scenarios, and consensus of experts.[4] It should be understood that none of these methods should be applied blindly or in isolation – past experiences, data, logic, intuition and common sense must be blended with each of them. For this article, extrapolation of existing trends, with due regard for possible changes, is the major tool.

Finally, as regards predicting the future, no one can say with certainty what will happen. Consequently, futurists usually speak in terms of probabilities. The probability of a future event, however, should be weighed against its consequences. Trivial events which are sure to happen need not concern us, but even if the probability of a catastrophic happening is small, it deserves attention. Continuing attrition in the amount of human labour needed in the world is fraught with such serious socio-economic consequences that even if there is no unanimity that it will happen, the possibility demands discussion of methods of obviating or encouraging it (depending upon one's goals) and dealing with it should it occur. This article is intended as a step in that direction.

## Present trends

### Productivity

One of the longest-continuing and most ubiquitous trends in the world of work since the Industrial Revolution, if not longer, has been the growth in per-person productivity. Although the amount of growth fluctuates from year to year and from country to country, the overall trend throughout the industrialised West has been consistently upwards. For example, between 1950 and 1978 the average output per hour of all persons in private business in the United States almost doubled.[5] The average annual increase in productivity in Western Europe between 1971 and 1980 ranged from 1.9 per cent in Luxembourg to 5.6 per cent in Belgium.[6] During this century alone, productivity has at least quintupled.[7]

The underlying reason for this growth in per-person productivity is increasing use of advanced technology. It would be fatuous to pretend that private sector workers in the United States, for instance, worked twice as

hard in 1978 as they did in 1950. On the contrary, it has been estimated that changes in work patterns account for only 10 to 25 per cent of changes in productivity; by far the largest contribution – 75 to 90 per cent – comes from technology.[8] As Zohar found in Canada, outmoded machinery, not human work patterns, is the usual barrier to productivity growth.[9]

Technology accounted for 54.5 per cent of the growth in national income per employed person in the United States from 1948 to 1969. This was four times more than business capital investment, 2.8 times more than investment in education, and 3.8 times more than increased efficiency in the use of resources.[10] It is hard to account for such constantly growing productivity other than as an outcome of continually improving technology.

## Working time

Not only has technology been responsible for constantly increasing productivity, it has also been a major factor in reducing the amount of human labour used. This is most easily seen by reviewing the reduction in weekly hours of work that has been going on now for many years. Patruchev points out that over the past 100 years the annual amount of spare time of the working population has increased four to five times.[11] In 1900 the average work-week in the United States was 53 hours; by 1979 it had shrunk to 35.5 hours for production and non-supervisory workers in private industry.[12] From 1957 to 1965 alone, hours of work in manufacturing in all the developed economies decreased by an average of 2.14 per cent.[13]

The number of hours worked is also reduced by the growing number of holidays – in the United Kingdom, for instance, basic paid leave for manual workers increased from an average of 1.75 weeks per year in 1952 to 3.5 weeks in 1977.[14] Workers are also entering the labour force later as high-school and university education increases, and leaving earlier as early-retirement possibilities expand. In short, over the past half-century, labour hours per unit of output have been reduced by about 3 per cent a year, and average hours worked per year have been reduced by close to 0.5 per cent per annum.[15]

Although shortening the work week has almost unanimous approval among working people – witness the recent steel strike in the Federal Republic of Germany based on the demand for a 35-hour week – it is also used for policy purposes. One method of trying to reduce unemployment is to cut down on working hours in an attempt to spread the existing jobs among more people. However, despite these and other methods of reducing or hiding unemployment, the problem continues to grow.

## Unemployment

Since the beginnings of recorded history there has never – with the exception of short periods of war – been full employment, in the sense of permanent, decent, well-paid jobs for everyone able and willing to work.[16] Mendelssohn holds that construction of the later pyramids in Egypt was a type of make-work project for labourers unemployed when the earlier pyramids were completed.[17] Vespasian forbade the use of water power in order to create jobs.[18] Herod began the construction of a wide road around ancient Jerusalem to give work to the builders of the just-completed Temple.

Since those times, governments have never ceased to be occupied by the problem of furnishing enough jobs. In addition to reducing working time, there have been and are plans for wage subsidies, tax cuts, public works projects, public service employment, training and retraining courses, national service programmes, encouraging investment in labour-intensive industries, financing the opening of businesses by the unemployed, and much else.

Despite all such efforts, the rate of unemployment continues to rise inexorably. Efforts to explain unemployment away as simply "structural",[19] "frictional", or "cyclical" no longer suffice, while the term "permanently unemployed" is being heard more often. Lord Beveridge, the father of the British social insurance scheme which is often cited as the blueprint for the Welfare State, spoke of 2 to 3 per cent unemployment as inevitable. However, in 1973 the Council of Economic Advisors in the United States spoke of 3.5 per cent as the "natural" (read: unavoidable) rate. The same Council now speaks of a natural rate of 6-7 per cent. Unemployment in Western Europe as a whole is reported to be 11 per cent and rising.[20] Of the 18 countries reporting unemployment figures to the ILO in 1955, only one had a lower figure in 1982.[21] Unemployment, and particularly youth unemployment, is currently one of the most pressing problems facing many European governments. And it should be borne in mind that the official unemployment figures are grossly understated. They usually omit discouraged workers, part-time workers seeking full-time work, workers who are not covered by unemployment insurance or have exhausted their entitlement, domestic workers, transient workers, agricultural workers, school-leavers and persons who are in training or retraining programmes because there are no jobs for them.[22] As a result, it has been estimated that official unemployment figures should be increased by from 50 per cent to as much as 300 per cent to reflect the real unemployed.[23]

In addition to unemployment as such, there are large numbers of unnecessary workers who are kept on the job needlessly ("featherbedding") and an enormous amount of unproductive time on the job ("goldbricking"). Labour-saving technology is often introduced only with guarantees that no workers will be dismissed. Longshoremen in New York agreed to the use of machinery only after being guaranteed 37 hours' pay a week whether they actually work or not;[24] Ford was able to modernise a plant only by

guaranteeing 2,560 employees 32 hours' pay a week until late 1987.[25] The *New York Times* had to offer 630 people *lifetime* contracts for work which required only 350 people in order to change its printing methods.[26] It has been estimated that 30 per cent of middle managers in banks in the United States could be released without hurting banking services.[27]

In so far as so-called "time theft" is concerned, Walbank found that people use about 44 per cent of their potential on the job;[28] 77 per cent of Yankelovich's respondents said they could work harder than they do;[29] all of Macarov's kibbutz respondents said the same thing;[30] and Cherrington's empirical study of building workers found that 49 per cent of their time was used for something other than the job in hand.[31] The gap between time nominally worked and actually worked seems to be widening. It increased by more than 10 per cent between 1965 and 1975.[32]

In short, despite decreasing hours of work and increasing unemployment, featherbedding and goldbricking, productivity continues to rise. It is reasonably clear that, mostly thanks to technological changes, society needs less and less human labour to provide the goods and services consumed. There is little reason to believe that this will not continue.

## The employment outlook

Technology is synergistic, each change feeding into and making possible further changes. To hold that technological change has come to an end, will come to an end, or will slow down appreciably, requires indicators that do not seem to be currently visible. On the contrary, Mensch, for example, wrote in 1982 that the next cluster of basic innovations could be expected around 1989 and that 80 per cent of the industrial products and processes being sold in the early 1980s would be replaced by alternatives by 1990. He also maintained that about 60 per cent of existing industrial products would be replaced during this century by something still to be developed or specified.[33] Further, the very speed of change seems to be increasing. More profound changes have taken place in the past four decades than in the previous six centuries.[34]

Wassily Leontief, who developed a "fully integrated dynamic input-output matrix" (for which he was awarded the Nobel prize for economics in 1973), applied this matrix to the total economy and arrived at the conclusion (in 1984) that "the intensive use of automation over the next 20 years will make it possible to conserve about 10 per cent of the labour that would have been required to produce the same bills of goods in the absence of increased automation".[35] Ten per cent may not sound enormous, but when it is recognised that in 20 years the United States' unemployment rate would be increased from the current 7 per cent to almost 17 per cent, or Spain's rate from 20 per cent to almost 30 per cent, and that another 20 years – still within the working life of those now entering the labour market – would see unemployment figures of 25 to 40 per cent, then the extent of the problem becomes more ominous.

Despite some demurrers, the impact of continuing technological change on employment possibilities is being increasingly taken into account in predicting and planning economic futures, although the remedies being proposed and tried sound distressingly familiar and inadequate. Thus one academic calls for employment of larger numbers of people on more, but shorter, shifts: "Companies would run two six-hour shifts, seven days a week. Three people would be doing what was formerly one job."[36] Others put the case for "short-time working", which is basically job-sharing.[37] However, as van Ginneken points out, "working time reduction policies . . . can redistribute existing working time and income, but cannot increase them. In other words, they do not substantially affect the factors underlying the present employment crisis."[38] Further, as Durkheim pointed out over 50 years ago, continuing segmentation of jobs leads to worker alienation and anomie,[39] while – perhaps more to the economic point – Homans found that there is a stage beyond which segmentation becomes too expensive. The costs of inventory control, record-keeping, bookkeeping, supervision, and co-ordination outweigh the gains from increased specialisation.[40]

Others see the encouragement of small businesses, and efforts to help the unemployed start up on their own, as the answer. Unfortunately, the bulk of recent new self-employment has been in such small enterprises as family stores, ethnic food stands, boutiques and the like whose average life is no more than four or five years, whereupon they go bankrupt or close down, returning employees to the labour market. Efforts to encourage local employment initiatives in Western Europe are "insignificant in comparison with the vast ranks of the registered unemployed; . . . the employment created rarely, if ever, approaches the figures for those made redundant".[41]

## New goods and services

Despite the evidence of diminished future need for human labour as a result of continuing technological change, there is an opposite point of view which holds that the very goods and services made possible by the new technology will require as much human labour as is used today, if not more. Estimates such as Leontief's, mentioned previously, and a growing number of similar projections, however, make this seem unlikely.

New products tend often to be simpler and more economical than their predecessors: an electronic telex machine has one microprocessor in place of 936 moving parts; an electronic cash register requires only 25 per cent as much labour to produce as its previous version.[42] In contrast with human labour, robot costs are coming down. Machines once costing thousands will cost less than $100, and the effective labour rate in many operations will cost only pennies per hour.[43] Already a set of clerical operations that cost $1.25 in 1956 can be done for a small fraction of a cent by a computer.[44] To the greater simplicity of the new products, and the growing inroads of technology in the services, must be added the fact that many new products supplant,

rather than augment, existing ones. Ballpoint pens replace fountain pens; compact discs replace a series of earlier music reproduction methods; computer games supplant pinball machines; and word processors edge out typewriters. Further, the new products seem to lend themselves to production by automation – computers can be turned out at a rate of one every 27 seconds and labour costs can be as little as 1 per cent of the total.[24]

Then there are those who see filling existing unmet needs as sufficient to take up any slack in employment – replacing the infrastructure of cities and highways, for example. However, this is precisely the kind of work where technology is rapidly replacing human labour. The image of gangs of men building roads with wheelbarrows of sand and tar must soon be replaced by the picture of a few highly trained operators (not necessarily male) sitting behind a console of controls in the air-conditioned cab of a gigantic roadbuilding machine, a few of which can perform all the necessary functions. The same will be true of most building and maintenance activities.

In so far as the so-called human services are concerned, the problem does not seem to be a shortage of trained personnel as such. One-third of the nurses in the United States are not working, and one-third are working only part time.[45] The latter figure also holds good for Israel.[46] Many schools of social work are graduating more people than can find employment in that field. In education, too, larger classes do not bespeak a shortage of teachers, but rather deliberate policy that eliminates their jobs. In fact, there is an embarrassing surplus of professionals – doctors, lawyers, dentists, psychologists, etc. – in most developed countries. Directing more people into these professions will not solve the problem of unemployment, nor will it improve the quality of the services.

In essence, the shortage of human service workers that is usually projected is not that of professionals, but of the lowest-level personnel. The presumed shortage is of people to push wheelchairs, make beds, do the laundry, feed the infirm, clean floors, wash dishes, etc. These are what Gans has termed the "dirty, dead-end jobs" of society.[47] Again, there is no shortage of potential workers for these jobs today, and therefore releasing more people from current employment will not ease the situation. The problem with these unfilled jobs is that people will take them only if absolutely forced to by circumstances, and then only for as long as necessary. And here, as in industry, technology comes in. Just as robots were first used in industry to do the dirty, difficult and dangerous jobs, so in the services necessity has created technological solutions.

Lack of people willing to walk with the elderly or the infirm resulted in metal walkers (walking frames) – low technology, to be sure, but nevertheless replacement of a human. Unavailability of people to push wheelchairs and do other menial or time-consuming tasks has led to electronic wheelchairs; beds that can be raised, lowered, or turned by pressing a button; paper bedlinen that can hardly be distinguished from cloth; devices that

continually monitor temperature, blood pressure, galvanic response, and brain waves; TV monitors with consoles in the nurses' stations; and a host of other inventions.

On a different level, decisions concerning types of probation recommended for criminals are being made more efficient by use of computers;[48] medical diagnoses are depending more and more on computerised information – the ways in which technology is invading the service sector are virtually endless, and still in their early stages.

Consequently, there seems to be a convergence of expert opinion that the amount of human labour needed will continue to diminish.[49] An AFL-CIO report says flatly: "There won't be enough high-tech jobs to replace the jobs lost in declining industries",[50] while Standing, after analysing the very intricate phenomenon known as technological unemployment, concludes that "those who dismiss the possibility that technological innovations raise unemployment are being dogmatic".[51]

Thus, even if the prospect of continuing reductions in the amount of human labour needed by society is not proven, the results of such a reduction would influence so many other aspects of society in so many ways that the mere possibility requires efforts to forestall or hasten the development, to influence its course, and to deal with its outcomes.

## The almost-workless society

### The transition period: Three scenarios[52]

First we have what might be termed the "cataclysmic scenario". The moral value with which work has become overlaid will lead many people – both those for whom there is work and the unemployed – to resist and resent changes leading to an almost-workless society, and to oppose efforts to ameliorate the situation when it occurs. During the transition period to a fully automated society attempts to slow or reverse the process will include neo-Luddism (sabotaging and destroying machinery), demands for income guarantees despite replacement of human labour by machines, calls for the return to a pre-technological culture, mass movements demanding jobs, and political demagoguery.

As jobs become more scarce, the struggle to obtain them will become more fierce, involving what has been termed "guerrilla tactics" in the job market.[53] Continuing job shortages may lead to riot, rebellion, revolution and anarchy.[54] Programmes to prepare people for (non-existent) jobs will first intensify, and then wane as their futility becomes apparent. Programmes to provide income for the unemployed will of necessity grow, despite bitter opposition from the workers who have to pay for them.

Among the relatively few who do work, there will be polarisation. Together with relatively few high-level, interesting, well-paid jobs there will be a majority of low-paid, routine, high-turnover jobs.[55] As telecommunica-

tion monitoring grows, there will be less time for loafing on the job, and an increase in worker alienation and job dissatisfaction.

There are alternatives, however. One of these might be termed the "peaceful scenario". Recognising the inevitability of decreasing human labour, social policies to deal with the eventuality might be initiated. A number of possibilities exist. One is to increase gradually both the coverage and the benefits of current social welfare programmes. Thus countries with children's allowances could convert these into family allowances, and then into individual allowances, at a level sufficient to maintain every individual at a decent standard of living.[56] Countries presently without such programmes could institute a reverse income tax, paying everyone below a specified income level a subsidy to bring them up to that level.[57] Alternatively, unemployment compensation could be raised to levels that make work attractive only to those who truly enjoy working. This would induce people to withdraw from the labour market and would incidentally put to the test the widely held belief that most people want to work and would do so even if money were not a factor.

Another method of going into the almost-workless world peaceably would be to help and encourage workers, or groups of workers, to purchase the tools that would replace them, sustaining themselves on the difference between the cost of buying and maintaining the equipment, and their earnings.[58] Or, going further, the current move towards participatory democracy in the workplace and worker purchase of enterprises could be pushed to the point where almost completely automated businesses would be owned by groups of former workers. Extension of co-operatives is another alternative, while adoption of the kibbutz system whereby every member of the group is assured his or her needs – and in many cases wants – offers another route.[56]

A third course might be termed the "passionate scenario", in that it calls for a conscious and deliberate effort to achieve the workless society as quickly and as painlessly as possible. Under this plan, workers would be encouraged and aided to invent themselves out of a job. Every worker would be persuaded to seek a machine or a method that would do his or her job better, faster, and/or more cheaply, secure in the knowledge that not only would there be a substantial bonus for devising or suggesting such an innovation, but that a share of the savings would be his or hers for life.

All the instruments of socialisation that caused work to be seen as the prime virtue in life would be used to emphasise other desirable activities – being a good parent, a good neighbour, a good citizen; participating in athletics, music, education, volunteering, exploring; humour, creativity, aesthetics, and even humility. In short, under this scenario the workless society would be projected as utopian, rather than dystopian, and efforts to achieve it would be seen as virtuous, rather than vicious.

## Values and structures

A society in which there is need for very little human labour will require both changes in values and revisions in structures, particularly in respect of income distribution methods. In so far as values are concerned, there seems to be an opinion that this will be the most difficult area – that values tend to be deep, enduring and hard to change. A glance at history, however, will indicate that this is not so. As Gordon has remarked: "Values change to fit the world which technology presents."[59] Thus, when unemployment reaches high permanent levels, quantity will change quality. Being unemployed will no longer be seen as due to a personal deficiency, but rather as something that is beyond the control of the individual, local administrators or welfare policy. Or, as Cunningham puts it: "When 10 per cent of the people do 90 per cent of the work, shall we continue to regard the other 90 per cent in the same light in which we viewed yesterday's 4 or 5 per cent unemployed? The question answers itself."[60]

Consequently, the reality of lack of work may lead to a relatively quick and easy change of values concerning it. Kaplan holds that many people already identify themselves, and are identified by others, in terms of their leisure pursuits – a golfer, a folk-dancer, a chess-player.[61] Further, many people who lead workless lives without stigma and with sufficient incomes – e.g. the relatively affluent retired – find other activities to structure their time, use their abilities, and give them a sense of self-worth.[62]

In so far as changing structures are concerned, some possibilities for changing the income distribution structure with the advent of an almost-workless world have been outlined above, but there are other alternatives. One of these is to redefine work to include activities not generally remunerated at present.[56] For example, it would be possible to pay people to engage in sports, to play musical instruments, to study and, in fact, to engage in any activity not harmful to others or to society. In a retirement community in Florida, where everyone is given some work to do to earn income, those who are capable of nothing else are paid to sit on a park bench and smile at passers-by. Paying people to engage in what are now seen as non-work activities will be made easier by the recognition that we currently pay – often lavishly – athletes, entertainers, musicians, racing-car drivers, and so on. We also pay students through scholarships, stipends, standing loans, awards, etc. By simply extending such pay to others who will engage in the same activities, regardless of skill or standing, income distribution other than through job-holding as currently defined would become possible.[63]

## Obstacles, questions and dilemmas to be addressed

Whether constant reductions in the amount of human labour needed by society is a possibility, a probability or a certainty, the need to address the situation is not only clear but urgent. Marland has estimated that it requires

50 years for a new idea to be incorporated in educational curricula,[64] and consequently it is not too soon to begin examining a situation which, if it eventuates, will have profound influence on every aspect and structure of society.

Unfortunately, one of the major obstacles in beginning to plan for the technological era is sheer unwillingness on the part of many people to admit even the possibility, no matter how remote, of such a development. So thoroughly indoctrinated have we become to seeing work as the chief idol in our pantheon of values that to admit of other values, even in the distant future, smacks of heresy. Otherwise objective academics and researchers have been known to become not only defensive, but offensive, in the face of data, trends, analogies and expert opinion concerning the future of work – positions they would never take on less emotional subjects.

Then, too, there are serious questions concerning which much more study and research are needed. Who will own the technology? What will be the role, if any, of purchasing power? How will taxes needed for various purposes be levied? What will be the role of the State? What will be the effect on international trade and relations, and particularly between less developed nations and technology-based countries?

In addition to these economic and political issues a host of others need investigation. What will be the role of leisure time? How will people fill their non-work time? What changes will be required in the educational system? What will be the relationship between the working minority and the non-working majority?

These and many others questions remain not only unanswered, but in large part unaddressed. It would not be feasible for any individual or small group of individuals to study all of these questions, much less arrive at possible answers. What seems indicated, therefore, is an international body of some sort – a centre, an organisation, a think-tank – discussing these issues on an ongoing basis, in an effort both to identify just and peaceable solutions and to ease the way towards accomplishing them.

There is enough evidence of a diminution of human labour in the future to take the question seriously. Nor should such attention be devoted to staving off the undesirable – a world in which people are relieved of the daily grind of work, and freed of economic pressure, by the use of machines might surpass ancient Athens which, under similar conditions, gave birth to the very bases of Western civilisation, in terms of the arts and sciences, government and philosophy, among other things. The technological age may usher in an era unprecedented in human happiness, creativity and health.[65] The very possibility should act to spur on those concerned about the human condition to seek the ways and means to arrive at the almost-workless society.

## Notes

[1] D. Macarov: *Worker productivity: Myths and reality* (Beverly Hills, California, Sage, 1982), pp. 21-22 and 57.

[2] Huber says: "We should consider more seriously whether the Third World ought to industrialise, or whether it might be able to skip this stage and develop a postindustrial society based on quality." B. J. Huber: "Images of the future", in J. Fowles (ed.): *Handbook of futures research* (Westport, Connecticut, Greenwood, 1978), pp. 179-224. See also D. Macarov: "Work and the prospect of social development in the West and elsewhere", in C. A. O. van Nieuwenhuijze (ed.): *The quest of "another development": A social approach?* (The Hague, Institute of Social Studies, 1981), pp. 205-237.

[3] Fiedler's Law says: "Give them a number or give them a date, but never both" (E. R. Fiedler: "The three R's of economic forecasting – Irrational, irrelevant, and irreverent", in *Across the Board* (New York), June 1977, pp. 62-63). Striner's Law says: "Never forecast for any period shorter than the balance of your life expectancy plus five years" (H. E. Striner: *1984 and beyond: The world of work* (Kalamazoo, Michigan, Upjohn, 1967), p. 1).

[4] E. Cornish: *The study of the future* (Bethesda, Maryland, World Future Society, 1977).

[5] *Monthly Labor Review* (Washington, DC), Mar. 1979, p. 107.

[6] B. Martens: "Employment policy, organisation of working time and unemployment in Belgium", in L. Bekeman (ed.): *The organisation of working time* (Maastricht, Centre for Work and Society, 1982), pp. 45-65.

[7] S. A. Levitan and C. M. Johnson: "The survival of work", in J. Barbash et al. (eds.): *The work ethic: A critical analysis* (Madison, Wisconsin, Industrial Relations Research Association, 1983), pp. 14-15.

[8] J. M. Rosow: "Human values in the work place support growth of productivity", in *World of Work Report* (Scarsdale, New York), June 1977, p. 62.

[9] U. Zohar: *Canadian manufacturing study in productivity and technological change* (Ottawa, Ministry of Supply and Services, 1982), p. 8.

[10] J. O. Wilson: *After affluence: Economics to meet human needs* (New York, Harper and Row, 1980).

[11] V. A. Patruchev: "The problem of organising spare time of society in conditions of the scientific and technological revolution", in M. R. Haug and J. Dofny (eds.): *Work and technology* (Beverly Hills, California, Sage, 1977), p. 230.

[12] *World of Work Report*, July-Aug. 1980, p. 53.

[13] *Year Book of Labour Statistics* (Geneva, ILO), 1957 and 1966.

[14] D. Bell: "The future that never was", in *Public Interest* (New York), Spring 1978, p. 42.

[15] J. W. Kendrick: *Understanding productivity: An introduction to the dynamics of productivity change* (Baltimore, Johns Hopkins University Press, 1977), p. 6.

[16] D. Macarov: "The concept of employment in social welfare programs: The need for change in concept and practice", in *Journal of Sociology and Social Welfare* (West Hartford, Connecticut), Mar. 1984, pp. 1-24.

[17] K. Mendelssohn: *The riddle of the pyramids* (London, Sphere, 1977).

[18] J. A. Garraty: *Unemployment in history: Economic thought and public policy* (New York, Harper and Row, 1978).

[19] See G. Standing: "The notion of structural unemployment", in *International Labour Review*, Mar.-Apr. 1983, pp. 137-153, for an understanding of the complexity of this concept.

[20] F. Vandamme: "The revised European Social Fund and action to combat unemployment in the European Community", ibid., Mar.-Apr. 1984, p. 168.

[21] *Year Book of Labour Statistics*, 1956 and 1983.

[22] F. Field: "Making sense of the unemployment figures", in F. Field (ed.): *The conscript army* (London, Routledge and Kegan Paul, 1977).

[23] A. Kogut and S. Aron: "Toward a full employment policy: An overview", in *Journal of Sociology and Social Welfare*, Jan. 1980, pp. 85-99; S. A. Levitan and R. Taggart, quoted in A. Levison: *The full employment alternative* (New York, Coward, McCann and Geoghegan, 1980);

Field, op. cit.; D. Macarov: *Work and welfare: The unholy alliance* (Beverly Hills, California, Sage, 1980).

[24] D. Macarov: "The prospect of work in the Western context", in H. F. Didsbury, Jr. (ed.): *The global economy: Today, tomorrow, and the transition* (Bethesda, Maryland, World Future Society, 1985), pp. 76-108.

[25] *World of Work Report*, May 1984, p. 8.

[26] A. Zimbalist (ed.): *Case studies on the labor process* (New York and London, Monthly Review Press, 1979).

[27] *World of Work Report*, June 1982, p. 48.

[28] M. Walbank: "Effort in motivated work behaviour", in K. D. Duncan, M. M. Gruneberg and D. Wallis (eds.): *Changes in working life* (Chichester, United Kingdom, Wiley, 1980), p. 417.

[29] D. Yankelovich and J. Immerwahr: *Putting the work ethic to work* (New York, Public Agenda Foundation, 1983).

[30] Macarov: *Worker productivity: Myths and reality*, op. cit.

[31] D. J. Cherrington: *The work ethic: Working values and values that work* (New York, Amacom, 1980), p. 110.

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[65] Marsden asks: "Why can't we see unemployment as valuable leisure, as opportunity; in Ivan Illich's words, as 'useful unemployment', as 'glad' rather than 'sad' idleness?" See D. Marsden: *Workless* (London, Croom Helm, 1982), p. 3.

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