

**The Mixed Blessings of Technology:  
Comments on Professor Roberts' Paper**

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Professor Roberts relates expressive activities, i.e. ceremonies, games, hobbies, competitive hobbies, as well as sports, competitive or otherwise, participatory or spectator-to technology, and especially to our changing technology. All these are non-working activities. I want first to discuss Professor Roberts' four suggested relationships between expressive activities and changing technology. Second, I wish to draw attention to the other side of the coin, namely, not leisure activity but work activity and its relation to the changing technology. My view is that leisure activity is largely a complement to work; which is what Professor Roberts suggests as the second of the four significant relations. This hypothesis can only be examined fruitfully, if we take into account more seriously than Professor Roberts has done in his paper the varied characteristics of work, which are rapidly changing under the impact of modern technology.

I

Professor Roberts suggests that the conservation of superseded tools and skills related to them may fulfil a function of conservation of technological information on a standby basis. His example is the stone metates and manos of the Zuni.

What happens to superseded skills? There are fewer and fewer new entrants into the trade, only old craftsmen practice it. They are being

employed in the backward or small firm, but also find their place in the meticulous, more 'personalized' techniques, ostensibly perpetuated in the production of luxury goods. Examples are prime Scotch whiskey and shoes made to measure. When the superseded skill becomes very rare, it might even fetch a very good price, such as the rare craftsman who can still re-thatch roofs or the rare blacksmith who shoes horses, since both thatched roofs and horses are now mainly luxury goods. The old skills are also continued in the repair and restoration of older artifacts if those qualify as antiques. Example: cabinet-makers for antique furniture, stonemasons for antique buildings. Or the craftsman may be demoted to repairing by hand or with old-fashioned tools artifacts mass produced by new machines. For example, shoemaker demoted to cobbler.

The retention in households of old tools and the memory of their use for ceremonial or other special uses is extremely widespread. Who has not got a mortar and pestle for some special Mediterranean recipe, and who does not use old candlesticks or brass dishes for festivities or special effects? These may be heirlooms or newly purchased. Added to the urge to collect, retain, and display antiques-not only family heirlooms, not only sophisticated antiques of sophisticated 'artistic' value-is the fashion of folk antiques. These may come from one's own surroundings (here it would be Canadian provincial), or from other technologically less developed societies (Druse coffeepots, Cambodian bows and arrows, Persian scimitars). This fashion is certainly ideologically grounded and, practiced most often by the educated, it reflects the idea of the machine-produced artifacts as unaesthetic in contrast to the hand-made artifact which is the outcome of individual creative effort and as such of aesthetic value.

So much for the retention of old artifacts; as to the retention of skills related to them, here the well-known fact signifies that such an artifact makes a better conversation-piece if one knows how to operate it, be it a local butter-churn or a Tibetan prayer-mill.

Superseded skills, then, continue as both marginal but viable occupations, and as the fashion of the educated. They are also being revived as hobbies, which is Professor Roberts' second category. He mentions pottery and folk-weaving, especially the competitive kinds which find their way to the craft-show. Let me point out here, that this trend is connected with the same folk ideology of the educated mentioned above, though it is by now well-entrenched in education in general, taught as handicraft in schools, summer camps, adult-education and occupational therapy classes. These activities have long been accepted as educational, creative, wholesome, and soothing. Adults participate in them either as a hobby or as a competitive hobby; some, especially women, even develop them as a partial or major source of income. The explanation of this trend lies in that same strong folk-ideology which has created a fashion, but there is also a genuine demand for a greater variety of artifacts for daily use, simply not produced by up-to-date industry. This includes even such simple commodities as useful and inoffensive ashtrays.

Superseded skills are also frequently used in the basic training of social groups: navies, sea cadets and sea scouts still train young beginners to handle old sailing ships; there are modern armies that still teach fencing. This might be caused by reverence to old traditions of the group and by belief in their contribution to character-building.

There is also the question, how much retention of skills is practised consciously as a standby for emergencies? Do 4-H classes and agricultural colleges teach milking by hand in case of power failure?

I would like to repeat Roberts' question-according to what principle do superseded skills qualify (like hand sheep-shearing, plowing with horses, showing great teams of Clydesdales) as hobbies, especially competitive hobbies? Do they have to possess some romantic folk-aura? Is a determined and sufficiently numerous body of practitioners of the old skill essential to teach and perpetuate the skill and embellish it as a hobby? ((1))

## II

Professor Roberts is especially fascinated, by the competitive aspect of these activities as a new category in his universe of games-all of which are competitive-sub-universe, skill. He views hobbies, thus, as an outlet for a strong urge for achievement, and in the case of pottery and weaving, mainly a frustrated artistic urge, best gratified by competition in these borderline artistic activities. Yet, as many of the practitioners of these hobbies are gratified by the non-competitive exhibitions of their products in their own intimate circles, Roberts proposes a tentative alternate explanation. Human beings may have an urge to use tools in order to be satisfied, he suggests. This line of thought, to my mind, seems to be the fundamental approach to satisfactory explanation of hobbies. It is in this line that I find room for my non-original hypothesis that hobbies most often complement work.

Roberts chooses functionalism as his first approximation. From such a viewpoint, hobbies may be fads and fashions, or social and business obligations-like a businessman's Saturday golf.

Roberts also supplements his first approximation with psychological explanations of hobbies-and then sees hobbies as an outlet for frustrated urges for achievements. I prefer now to take psychologism as my first approximation, and view hobbies not as outlets for frustrated urges for achievement in general, but more specifically and with more explanatory power and with more testability I suggest hobbies as compensations for the limitations of one's work activities.

It is no accident that it is the educated man who is attracted, as Roberts suggests, to the use of tools in the manual hobbies; for example, my acquaintance the psychology professor who minces his own sausages and my friend the rhetoric professor who polishes semi-precious stones. This is an urge of the man confined to reading, talking, and marking papers, to use his hands and his tools. Leonard and Virginia Woolf printed the early books of the Hogarth Press on their kitchen table and hand-bound them in their scullery in the afternoon, following a morning of intensive writing in the bedroom.

Other work-conditions drive one to other manual leisure activities. The housewife with her repetitive chores, especially the educated housewife, perhaps imbued with artistic hopes, may paint pictures or sculpt statues. More often, handicapped by inability, timidity, or excessive self-criticism, she might turn to pottery or weaving. It would be interesting to find out how many of those appearing in the craft-shows surveyed by Professor Roberts are frustrated educated housewives.

Still different practitioners of manual leisure activities are routine factory workers. One example is the much discussed Ford Assembly Line

Victim, who tinkers in his spare time with second-hand cars and perfects them. This is a case of a man's skill and ability being frustrated in his low-skill fragmented work activity. This man does use tools, and even regularly, yet his urge is there-to use his tools meaningfully to him; hence it is the desire for compensation. In general it is the so-called semi-skilled routine factory workers who most often channel their unused extensive manual skills in to do-it-yourself activities around the house.

Pigeon fancying, greyhound breeding, or gardening are other hobbies which compensate such fragmented meaningless routine work: they produce complete living products which are property and pride, and may also satisfy a completely frustrated urge to achieve and to compete. Yet the compensation aspect and the competitive-achievement aspect are different; and, in my view, the latter is merely a part of the former. Gardening, the production of growing, living things, also is a favourite compensation for the non-professional white-collar office and business employee.

The lowest group of the blue-collar worker, usually the least skilled, least educated, and certainly the least secure, as Professor Roberts points out, most often do not develop a sufficiently creative compensatory hobby, but are compensated only either in expressive activities of games of pure chance, such as playing the football pools or the numbers game, or through activities of the simplest escapist nature such as the regular use of alcohol or drugs. Here certainly, only the realization of the promise of modern technology, which has for the first time made it technically possible to eliminate all jobs of sheer drudgery, will open the doors for all to more desirable and less self-destructive expressive leisure activities. Here, obviously, social technology severely lags behind physical technology.

### III

I have nothing to add to Roberts' very nice and interesting idea that the American practice of expressive travel is an example of incentive for technological innovation through expressive leisure activities. We might look for additional examples.

Leaving his third relationship between technology and expressive activities, I wish to comment in more detail on his fourth, which needs more elaboration and clarification.

Expressive activities may contribute, he says, to maladjustment to the technological system. His example is certainly very enlightening. It is competitive and self-testing driving, which certainly contributes to such well-known social problems as traffic accidents, congestion, air pollution, etc., as well as wasteful highways and super-highways.

If I remember rightly, Roberts also sees in competitive and self-testing driving an outlet for the potent strategist power personality ((2)). I understand that he sees in this a psychological compensation. He does not indicate what limitations and frustrations in work-life these activities complement. Here, possibly, the defects compensated may be other than in work, e.g. family frustrations. Roberts points out that his subjects are all strongly achievement oriented; the questions I would like to ask are: what jobs do they occupy, do they have good promotion prospects in their jobs, and if yes, how successful are they in attaining such prospects. It seems to me more unlikely that the strongly achievement oriented person who progresses well in his work, or even who merely entertains high hopes of progress, should exhibit such competitive and self-testing driving patterns; it may be rather the achievement oriented person whose

job is utterly unprogressive or who merely failed in his own eyes to take advantage of chances which were once offered to him.

Here again modern technology, which is on the verge of turning many previously unprogressive industrial jobs into steps of career ladders, may provide some relief to frustrated urges for competitive achievement. Provided that this human aspect of technology should be studied further and be taken more seriously into consideration in the planning of the application of technological innovation.

In white-collar occupations the situation is more complicated. Here the partial introduction of automation (computers, modern office machinery) has at the same time created new jobs of very high skills, and eliminated great numbers of medium skill or semi-professional jobs ((3)). Insurance and banking rank and file employees, for instance, were usually required to possess a good overall knowledge of the various branches of the industry. Nowadays, great numbers of such employees are reduced to punching cards for computers. A further development in automation might very well eliminate most routine white-collar jobs altogether. In the meantime the challenge and openings for achievement and promotion-openings for the use of intelligence in any capacity-are reduced for these lower white-collar employees.

#### IV

I now wish to put things more systematically. My overall hypothesis in the previous discussion was this: leisure activities tend to complement work-activity; the limitations of the work-situation tend to be compensated in leisure activities. Let me briefly survey some of the more obvious cases to which the hypothesis should apply.



First the unskilled worker. The work situation of the unskilled manual worker might be described as including extreme drudgery, low education, low skill, and much insecurity. This work situation produces escapist or passive leisure activities, such as drink or drugs, extremely passive television watching, an undemanding social life such as non-organized visiting with relatives and neighbours, intellectually non-demanding card games. Professor Roberts has pointed out the connection between insecurity and games of chance: the American Negro plays the numbers game, the British worker is addicted to football pools and greyhound racing, for the lower classes of several European continental countries lotteries are all important. Here I wish to raise the following empirical question to test this: does gambling decline with the decline of insecurity? According to Professor Roberts it should. Large masses of the lower-skilled European manual workers have gained a high degree of security through the services of the welfare state and the decline of the threat of unemployment. Has their gambling declined? If, as I suspect, the evidence will show otherwise, other striking characteristics of the unskilled or low-skilled worker's situation might explain his tendency to games of pure chance: he receives the lowest wages, has little expectation of significantly improving his standard of living, has little expectation of ever coming by the price of such desired luxuries as a journey abroad, a new car, a mortgage-free house, a fur coat (all of which have come in the last decades within the reach of the higher skilled European manual workers) from his ordinary wages. His life, while more secure, is still very drab and grey; and this aspect still calls for the compensation of gambling and its hopes for little windfalls or even for hitting the jackpot.

Second, the steady semi-skilled worker. How does the work situation of the steady semi-skilled factory worker find its complementation in leisure

activities? The semi-skilled worker is usually not a school dropout; in Britain he has gone to school up to age 15, in the United States nowadays even to 17 or 18. He usually has a considerable amount of manual skill. But on each actual job he uses little of his formal education, and each job of machine-tending or work on the assembly line demands extremely limited manual skill and no initiative, because it is completely routine, repetitive and often paced by the machine. The work is fragmented and meaningless; the worker has little sense of being the producer of any finished product. And of course the factory worker-unlike the artisan-neither owns his tools, nor the product of his work.

This group of workers' real income, however, has risen considerably mainly due to strong unionization. In the United States large numbers of semi-skilled workers have become suburban home-owners and of course also car owners; in Britain they tend to be steady tenants or buyers of 'Council houses', and all over Western Europe they are owners of major appliances and increasingly also of cars.

Among this group we find the many 'home-centred' craft hobbies: ((4)) the carpentry, and other home-improving activities, the tinkering with and tuning-up of cars, the widespread gardening ((5)). All these involve personal choice, considerable skill, initiative, the production of a finished object and pride in its ownership. They also tend to lead to the acquisition of an impressive array of hand and small power tools and to great pride in their ownership ((6)). The frustrations of industrial tool-using are compensated for by a very different kind of tool-using in leisure activities.

Housewives constitute a rather neglected group of frustrated manual workers and tool users. Their case is of course very different from that of the routine factory worker. They use a considerable number of

skills but all carry little social prestige. Their work though consisting of dozens of different actions is nevertheless very repetitive from day to day and from week to week. Perhaps its greatest frustration is the lack of permanence of its product.

Mechanization and urbanization have reduced the requirement for skill and have taken most of the creativity out of the housewife's work. At the same time the level of girls' education has greatly increased. The discrepancy between the intellectual skills of many high school graduates and even more of the college-educated woman, and the demands of modern, urban house-work, has become extreme. Through her education her wish for achievement has been fostered, she has also been imbued with the importance of self-expression and creativity, often her artistic tendencies have been encouraged. This group of women is likely to take up artistic pursuits as hobbies, or if not successful, hobbies of the superseded folk craft category. These activities carry prestige and an opening for competition and achievement. The work is non-repetitive. It satisfies the need for self-expression, creativity, artistic endeavour; it produces permanent artifacts.

Many educated housewives do of course choose other leisure activities such as work in one of the many women's voluntary charitable, social service, educational, political, or plain 'social' organizations. These compensate for the condition of loneliness that frustrates many housewives, and also create an outlet for desires for prestige. A major drawback lies, however, in the tendency of many organizations to assign to the voluntary 'non-professional' mainly little-satisfying routine tasks- thus not satisfying the women's need for exercising their intellectual skills and their initiative. Frustration in leisure activity, that is to say the

inability to find compensation to work in hobbies, and its undesirable consequences, cannot be discussed here.

As to craft and highly skilled workers in industry and to the remaining artisans, I confess that I have too little information. A high rate of satisfaction in one's work might simply lead to little or no hobby ((7)), a case to which I shall return later. Alternatively the traditional craft worker, e.g. the printer, is known for his choice of intellectual hobbies and intellectual-organizational hobbies, from union activity to workers' education.

Leaving now the tool-pushers we come to the pen-pushers and the people pushers; I first want to discuss the non-intellectuals and non-professionals (treated here as one group). Defects of their work situation are its seeming futility or artificiality, its being indoors and out of touch with nature, and in the case of many of the lower white-collar jobs, the prevalence of routine as well. For compensation they turn to gardening, outdoor sports and pursuit of the wide open spaces ((8)); sports compensate for sedentary work and non-use of most muscles, gardening and craft hobbies satisfy also the very widespread urge to use tools ((9)). However, the craft hobbies of this group tend to be more sophisticated and often even esoteric (10)).

Finally the professionals and the intellectuals, including here the dedicated executives, administrators and politicians. Kenneth Galbraith has described their peculiar work situation in his 'Affluent Society' where he named them 'The New Class'. What in the past used to be the prerogative of a small minority is now a cherished privilege of a considerable and growing group- the choice of one's life's work according to one's interest and inclination and the conviction that it is worthwhile; this is what used to be called a vocation or avocation. Most professionals -

though not all- belong here. While others see in their work chiefly a must, a job, and a means for making a living, and clamour for a reduction of working hours, the professionals' working hours are not on the decline and after 'business hours' they tend to pursue activities closely connected with their professional interest. Their leisure activities seldom develop into full-blown hobbies (11).

This much for the types of typical work frustrations and for the types of typical hobby -compensations to complement them. There remain a few more questions. There is the frustration of non-achievement. There is the question of the impact of the changing work situation. And there is the breakdown and shift of boundaries between traditional occupational groups.

The absence of achievement prospects, whether achievement is of acquiring higher skill, status, prestige, or responsibility, is a significant factor in many work situations. Does this necessarily cause frustration? This depends on expectations, social and individual: the more achievement is expected the more its absence is frustrating. Are many workers in such non: progressive situations achievement-oriented and therefore frustrated? Are many workers' wives, relatives, friends, and neighbours achievement-oriented and therefore a cause of frustration in the worker? And, is frustration necessarily the result of downward occupational mobility?

Many studies have made observations on the relatively lower achievement-orientation found in the children of the blue-collar worker. The usual explanation is found in the child-rearing and socialization practices of lower class and working class parents. Hence we might expect less frustration in these hereditary blue-collar workers and hence less search for compensation through leisure. These findings have,

however, been challenged recently by findings of remarkably high ambition of workers' children especially the sons of skilled workers. If these ambitions are doomed to frustration by unequal educational opportunities, the result should be a growing frustration.

Blue-collar workers, it also has been argued, include a larger number of people lower on achievement-orientation and perhaps also on intelligence than the population at large, not because of their upbringing, but because in a relatively mobile society those more achievement-oriented and more intelligent tend to make it to jobs with more prospects. Here frustration has been overrated, some claim, because of differences in temperament between middle-class researchers and working-class routine operatives.

Be this as it may, recent findings have shown that the degree of job-satisfaction of workers in the technically very advanced chemical, petroleum refining and power-generating industries which have developed a career ladder of increasing training ((12)), responsibility and prestige, is considerably higher than that of workers in the traditional non-progressive industries ((13)).

This leads us to the question of advancing technology and changing work situations. As I have just indicated, introduction of modern technology leads to the decline of the static semi-skilled machine-tending and assembly-line " working population. A better known fact is the recent spectacular shrinkage of the unskilled population in industry. Many traditional production and maintenance skills are also being supplanted. In their place comes a new skilled production and maintenance worker who is continually in training of a partially cerebral kind ((14)).

Semi-professionals falling between the traditional blue and white collar groups appear in the new group of engineering technicians whose greatest frustration, we know, is that they are not regarded as engineers proper. How they compensate for this hang-up in their leisure activities we do not know.

The new progressive, intellectually more agile blue-collar worker, we might expect, will develop a taste for intellectually more demanding leisure activities.

I have perhaps offered more questions than answers, clustered, it is to be hoped, round a worthwhile hypothesis which invites further tests.

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## NOTES

1. Superseded skills which make for good outdoor sport have of course also quite an advantage. Hence the popularity of archery. Hunting and fishing can also be classified as superseded skills as they no longer serve a productive purpose. They had the enormous advantage of being chosen as leisure activities very early on, hunting as the privileged pastime of the nobility (hence its snob appeal in Europe); and the contemplative merits of fishing have long been extolled by the middle class. In the United States these superseded skills or hobbies have indeed acquired massive following: according to 'Much ado about Doing', *Business Review*, Federal Reserve Bank of

- Philadelphia (July, 1959), pp. 11-13, 30,000 licences for fishing and 20,000 for hunting were issued in 1958 alone.
2. I have nothing but admiration for Professor Roberts' walking-conflict theory.
  3. Walter-Raymond-Stiftung- *Der Mensch im Betrieb*, ii (Kiiln, 1962), 215. In this report from a large insurance company the following effects of the introduction of computers are described: before it appr. four-fifths of all employees had a general understanding of the different branches of insurance. In 1961 only one-fifth are qualified; the rest deal with routine work almost mechanically, without responsibility, without need for, or freedom of, decision. Their training takes barely one month.
  4. Robert J. Havighurst and Kenneth Feigenbaum, 'Leisure and Life Style', *American Journal of Sociology*, 64 (1958-9), 409. The authors point out the fact that the 'home-centred life-style' is prevalent among blue-collar workers.
  5. Milton M. Gordon and Olarles H. Anderson, 'The Blue-Collar Worker at Leisure', in A. B. Shostak and W. Gomberg (eds.), *Blue-Collar World* (Englewood Cliffs, 1964), pp. 411, 412,413. Alfred C. Clarke, 'The Use of Leisure and its Relation to Levels of Occupational Prestige', *American Sociological Review*,**21** (1956), 306.

Nels Anderson, *Work and Leisure*  
(London, 1961), p. 104. Anderson quotes Joffre  
Dumazedier's ('Réalités du loisir et idéologies', *Esprit*, 27  
année, no. 274 (juin, 1959), p. 819) interesting point that  
much of the widespread 'moonlighting' work done by factory



workers fulfil that same role of compensating for the regimented work at the work-place.

Bennet Berger, *Working-Class Suburb* (Berkeley and Los Angeles, 1960), especially p. 66. Berger points out the role of 'puttering with the engines' and do-it-yourself projects in the informal, home-centred social life of his suburban Ford workers.

6. Gordon and Anderson, op. cit. p. 412, relates the prevalence of ownership of expensive tools among his Western Massachusetts factory workers.

Morris L. Ernst, 'New Sources of Energy, Leisure and World Culture', *Proceedings of the International Recreation Congress, New York* (National Recreation Association, 1956), p. 7, states that 20% of all the homes in our country, ten million homes, have power tools, a saw, a lathe. . . '.

7. Nels Anderson, op. cit. p. 256, discusses the special quality of the work of the craftsman: 'The work of the craftsman whose job is creative and challenging. . . contain(s) a quasi-leisure quality.'
8. Morris L. Ernst, op. cit. p. 7, mentions 8 million bird-watchers in 1956.
9. David Riesman, *The Lonely Crowd* (New York, 1953), pp. 333-6. According to Riesman business and advertising executives find in gardening and craftsmanship a compensation for the insincerity and the parasitical nature of their work. They find in it a return to basic virtues.

10. Gordon and Anderson, op. cit. pp. 305, 306, mentions model-building, sculpting, painting and various forms of woodworking. Morris L. Ernst, op. cit. p. 7, claims that in 1956 there were 200,000 boat-builders in the United States.
11. Gordon and Anderson, op. cit. pp. 306, 307, report that in the top occupational prestige group of their sample there was the highest percentage of those who would use extra leisure 'to work at their job'. They offer this explanation: 'At the extreme- a man's profession becomes so important to him, aside from pecuniary considerations, that it becomes his avocation as well as , his vocation.'
12. Robert Blauner, *Alienation and Freedom* (Chicago, 1964), p. 149.
13. Blauner, op. cit. p. 175.
14. Friedrich Pollock, *Automation, Materialien zur Beurteilung der ökonomischen und sozialen Folgen* (Frankfurt/Main, 1956), pp. 13-14, 103-4.

Blauner, op. Cit. p. 145.

Louis Levine, 'Effects of Technological Change on the Nature of Jobs', in *The Requirements of Automated Jobs, North American Joint Conference, Washington, D.C., 8-10th December, 1964*: The introduction of automatic transfer equipment. . . is creating a need for maintenance men with wider ranges of knowledge. Electricians now must have a knowledge of electronics, and machine repair-men knowledge of hydraulic and pneumatic systems (pp. 126-7).

In console-controlled concrete production. . . the operator and (the) maintenance men. . . now need some knowledge of electronics. . . (p. 132).

The elimination or reduction of physical effort in many jobs has been offset by a corresponding increase in mental activity (p. 133).