

## **Two feasible Future Scenarios: A high-tech Utopia – and a high-tech Dystopia**

Trond Andresen <trond.andresen@itk.ntnu.no>

**(In: Proceedings of the 5th Path to Full Employment Conference and the 10th National Conference on Unemployment Newcastle, Australia, December 10-12, 2003 – slightly revised here). Also in the Post-Autistic Economics Review, issue 25., May 2004, and in "Real World Economics: A Post-autistic Economics Reader", Edward Fullbrook (editor), Anthem Press, 2007**

### **Abstract**

Two different far future scenarios are discussed: Both have a highly automated manufacturing sector with a small workforce, and a large labour-intensive service sector. The first, “utopian” scenario is inspired by the Marxian vision, with some important modifications: Limits to consumption still exist, certain goods and services are still exchanged in a market. It is argued that the Marxian utopia is a useful “asymptote” to strive for, even if it can never be reached. The second, “dystopian” scenario has few workers in manufacturing just like the first. Manufacturing, and the much larger service/servant sector is run on authoritarian capitalist lines. It is argued that profit rates can be sustained indefinitely in such an economy. The current worldwide attempts from corporations to take over service activities that have until now been in the public sector domain is discussed in the light of this.

### **1. Introduction**

The current political and ideological climate does not encourage launching and discussing of truly long-range goals for societies (in this paper “long-range” means “a century or two”). Such topics are discouraged for several reasons:

1. The dramatic and complete collapse of attempts at socialist societies.
2. Related disillusionment also because of revealed theoretical and ideological weaknesses of socialism and communism.
3. The increasing “postmodernist” belief in many academic and intellectual circles that (even) such until now uncontroversial “programs” as enlightenment and progress are “simply not possible”.

This paper holds that the baby is being thrown out with the bathwater. If utopias – grand visions for qualitatively better societies – do not play a part in public debate, *this has detrimental effects on political choices made today, also and even when the visions in themselves are maybe infeasible and can never be completely realised*. In this context the metaphor of an asymptote may be useful. An asymptote in mathematics means a straight line that a given graph approaches with an always diminishing gap, but which it will never reach completely. The utopian society to be presented is feasible in an asymptotic sense.

Another important concept for this paper is *the self-fulfilling prophecy*: Political processes, as opposed to natural or “physical” processes, are subject to this mechanism. If some new view or proposal for big change is disseminated only by some individuals or fringe groups, and only mentioned occasionally in the media, it may easily be disparaged as “crackpot”. But attitudes and ideas that are repeatedly disseminated and talked about, will after a while seem feasible and “realistic” even if they were initially met with skepticism – what was controversial

becomes conventional wisdom by repetition. An example of the latter is how public opinion of what constitutes a “realistically” achievable level of employment has (been) changed since the early seventies, and how this change in opinion has made possible political reforms to the unemployed’s disadvantage. But the mechanism of the self-fulfilling prophecy should also give grounds for optimism, since it can work the opposite way: It indicates that unconventional or “grand” ideas should not necessarily be considered crackpot because they are initially derided.

In the above spirit, with the (somewhat pretentious) notion of contributing to self-fulfilling prophecy processes, this paper will present both a utopia and a dystopia. The first one should be strived for, the second one avoided (the author brashly assumes that most readers will agree on the attractive, respective repulsive, characters of the two scenarios to be presented).

Both future visions have something in common: They presuppose that science and technology progress in a relentless manner, and is not something that may or will be hindered or retarded significantly by human interference. (Thus the possibility of a grand collapse of modern civilisation into barbarism for some reason is not considered.)

With the assumption of progress in science and technology (I should note the term “progress” is used in a strictly descriptive way – not implying any positive value per se), it follows that employment in all types of work that can be automated, will contract: in the dystopia, to increase profits without a second thought to those that lose their jobs, in the utopia as a deliberate tool to liberate labour for meaningful “service” jobs – creating, interacting, teaching, entertaining or caring for other people.

## 2. The utopian scenario

Maybe the most famous single quote describing the essence of a future utopia is this from Karl Marx:

“In a higher phase of communist society, after the enslaving subordination of the individual to the division of labor, and therewith also the antithesis between mental and physical labor, has vanished; after labor has become not only a means of life but life’s prime want; after the productive forces have also increased with the all-around development of the individual, and all the springs of co-operative wealth flow more abundantly – only then then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: From each according to his ability, to each according to his needs!” (Marx, 1875).

Marx’ visions for communism is (sadly) somewhat out of fashion these days, so let us turn to literary (science) fiction, which is less constrained by what is considered “realistic”. The novel “The Dispossessed” by Ursula K. LeGuin (1974) describes a communist society in the Marxian sense (with one important exception). In the language spoken in this society, the word for “play” and “work” is the same. But there is a separate term for “drudgery”. This is an important point for the utopia to be discussed: Work must be attractive in itself. LeGuin’s utopia diverges strongly from the Marxian one however, in the sense that “to each according to his needs” is difficult to fulfill. Hers is an anarcho-communist society *with scarcity*. This society is realised on an arid planet with few natural resources, and is constrained by this in spite of advanced science and technology. While individuals are not restrained by rationing or the need for money (which does not exist in a communist economy), and therefore in theory may consume or take whatever and as much as they want of the output of society, they hold back voluntarily only by the (more or less internalised) fear of losing the respect of their fellow citizens, and/or their self-respect.

Another utopian novel is “Voyage from Yesteryear” by James P. Hogan (1982), where a robotic expedition arrives at the abundant and pristine earth-like planet Chiron. The expedition has a cargo of the necessary genetic material to “hatch” a new generation of humans. These children grow up under benign robotic supervision, and – free from the influence of any earthly society – spontaneously create a utopia without a state, coercion, money, wages, formal

authority and hierarchies. As opposed to LeGuin's utopia, this is a society with nearly limitless abundance due to technology (robotics, tamed fusion energy) and a low population in relation to the resource base. So what makes people behave in Hogan's utopia? – Something similar to that in LeGuin's society: Respect and self-respect. A second and much later wave of colonisers, this time consisting of actual grown-up human beings with all the conventions and hang-ups due to socialisation in a competitive capitalist society (earth) arrives on Chiron and is confronted with attitudes and values which they simply do not grasp: "When in a store, and you don't have to pay for anything, why not grab all the attractive goods you can lay your hands on, and come back for more?" "– You will learn", the Chironians reply, cryptically. And most of the new colonisers do. The Chironians also has an interesting "informal command structure": Authority exists only to the degree workers in a plant accept that a certain person aspiring to a leading or coordinating role has the talent for this. If not, the person will simply be disobeyed or ignored. But if the person is considered competent, her right to take decisions on behalf of the collective is readily accepted, and "orders" are loyally implemented.

With Marx and these books in mind, let us now discuss the material basis for a(n) (at least "asymptotic") utopia. What enables today's high living standards in industrialised countries (abstracting from exploitation of poor countries and unsustainable use of the environment) is

- a high level of education,
- modern infrastructure (communications and transportation),
- automated manufacturing, process industry, and information-technology mediated services.

The last factor is underestimated and will therefore be discussed. Let us begin with the question: What sort of work *can* be automated, and what sort of work cannot – or should not – be automated? A former Norwegian conservative prime minister once replied in an interview that it was the governments goal to "increase the productivity in our day-care centres", which demonstrates that he had not reflected much on this. For work where people care for, teach or entertain other people must necessarily remain labour-intensive, regardless of technological advances. One should instead pose the question from another angle: Isn't the point of automation where it is technically possible and not detrimental to people or the environment, to increase our capacity to instead "work" with and for each other? Should not working with/for other human beings be less – not more – "efficient" in a throughput sense? ("Work" is here placed in quotation marks in the spirit of LeGuin). A future car assembly plant, or a paper factory, or industrial cleaning, can be run with hardly any staff. Such automation has no adverse side effects (cars or paper or floors or other non-living things do not need human caring). The only argument for upholding such jobs is in a type of society which cannot offer alternative employment. But if "liberated" workers had (more) meaningful work to go to, shedding workers because of automation would be just the way to go.

The future utopia then has a tiny workforce (a couple of per cent) in highly automated and roboticised plants, churning out manufactured consumption and investment goods, and processing raw materials for inputs to other factories<sup>1</sup>. The public transport system is also highly automated and (at least for the urban stretches) free. Over 90% of the workforce is employed a few mandatory hours a day or per week (but if they like they may of course work more – most work is play anyway) with jobs consisting of interacting with other humans, or doing individual creative-type work, which also cannot and should not be automated. Tasks are

- sports
- cultural and creative activities

---

<sup>1</sup> There are also service sector jobs that can and should be automated – examples of this are the ATM and Internet banking, reducing the need for banking personnel dramatically. So "automated manufacturing" in this paper should be interpreted in a wide sense, also incorporating a part of service sector activity.

- media
- research
- teaching, also in a wider sense: Mountain-climbing, horse riding, diving, chess-playing
- day-care, health services, care for the elderly – with a dramatically reduced workload

All these services are cost-free for the users.

Other tasks that also has a limited potential for automation is working with non-human living organisms, like in

- ecological restoration
- ecological agriculture, which will be more labour intensive than today's industrialised version

The reader may protest that not all of these tasks are purely work/play in the LeGuinian sense, but contains elements of drudgery. This is an important objection. In spite of automation and information technology, some necessary work will – due to its character – not change much, and remain boring or unpleasant. The answer to this is (even) shorter mandatory working hours for such jobs, and job rotation – which has merits in itself. In Marx' words:

“In communist society, where nobody has one exclusive sphere of activity but each can become accomplished in any branch he wishes, society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have a mind, without ever becoming hunter, fisherman, shepherd or critic.” (Marx, 1845).

A bit more prosaically one could say that a small amount of drudgery (changing napkins in the nursing home) qualifies for a lot of pure work/play (hiking in the bush with the kids).

Another objection is “why should people at all work in/with factories and manufacturing plants when they instead can do all this more meaningful and/or entertaining stuff?” The answer to this is twofold:

- A minority of people is deeply fascinated by tinkering with technical processes, and gradually making them run even better. And they are not very interested in interacting with people as the central point of their job.
- Pride: The select few that control the utopia's manufacturing plants and process industry are the persons enabling society as a whole to enjoy its very high living standard. They know it, and the others know it too.

This utopian scenario assumes that there is a reciprocal understanding and respect between the “producers” and “non-producers” – an understanding that is lacking in today's societies. In the author's Norwegian experience, debates on government budgets and macroeconomic choices to a large degree take the form of an entrenched conflict between two camps: The employers and some union leaders in the “competitive private sector” emphasise that “the rest of society lives off the values created here”, and therefore public sector spending and wages should be curbed. Public sector union leaders on the other hand, hold that spending should be based on “what is needed”, and their wages should track those of industrial workers. They have little interest for or understanding of the importance of an industry exposed to the efficiency demands of a world market. This is a deadlock that could be ameliorated by discussing scenarios of the type that is presented here. The solution should be to get the “warring factions” to agree on the following:

*Automated state-of-the-art manufacturing and process industry is a prerequisite for affording a comprehensive free (public) service system. But manufacturing and industry is not a goal in itself. A comprehensive free essential services sector is the goal – automated manufacturing is mainly a means.*

(A note about the term “essential” used here: The utopia is organised such that the type of private services which we see on the rise today will not be very much in demand: Finance, security, marketing, catering to the rich. These are here termed “non-essential”, see also the section on the “dystopian scenario” below.)

Another issue that should be discussed in the light of the utopian scenario, is whether a country *today* should do something to uphold and develop manufacturing, or should it all be outsourced to countries like for instance China. An argument in favour of today’s trend is that these countries need to export to richer countries to lift themselves out of poverty. And wages there will increase as they develop, so these countries’ competitiveness will decrease correspondingly. Then automated manufacturing may be revived in those of today’s importing countries that temporarily gave it up for overblown non-essential service like for instance finance, marketing and similar businesses. This is possibly an acceptable strategy, but it is not at all publicly discussed today. Seen in the time perspective suggested in this paper, it is self-evident that any country that wants the type of near-utopian society that is sketched, must have its fair share of state-of-the-art automated manufacturing. Note also that this implies a critique of today’s widely publicised opinion in academia and among media pundits that western developed societies have reached an advanced “post-industrial” stage. The reality is that these societies have simply outsourced their manufacturing to countries with low wages. The following should also be discussed in connection with the utopian scenario: What is a “high living standard” and does this not imply environmental damage? But work consisting of interacting with other people is not ecologically unsustainable. “A high living standard” in our context does not mean a large consumption of resources and energy, and corresponding waste generation. The necessary energy may be generated from renewable sources and through efficiency improvements, particularly in end-uses. The feasibility of this even with today’s technology has been demonstrated by – among others – Reddy, Goldemberg and Johansson (1989). And with comprehensive use of information technology and robotics, goods may be efficiently produced and recycled, and waste minimised.

A final point in this section about a long-term utopian scenario, is “can we get there gradually”? Ignoring the controversies on the political left about “reform versus revolution”, I will here suggest that a modern market economy may (at least in theory, assuming that persons/parties with the political will for it is in power) be gradually changed in the direction of the utopia, by – among other things – carefully selecting activities that are “ripe” for being made public and cost-free for the users. Such selection can be done based on at least one of the following criteria being fulfilled for the product or service in question:

1. Limitless consumption is no problem, capacity- or environment-wise (example: local phone calls, Internet access). (This is the sole – and therefore unrealistic – premise of Marxian “higher-stage communism”.)
2. Consumption is due to its nature inherently limited or rationed (example: schools, hospitals, funeral services, local public transport but not long-distance travel).
3. Neither, but attitudes have changed, so that people voluntarily abstain from over-consumption of a certain good/service.

By these criteria, a fair share of modern industrialised societies are already somewhat “utopian” or “communist” (“.....from each according to his ability, to each according to his needs”), in the sense that essential public services are free or with low fees (even if there are forces at work trying to – and to some degree succeeding in – rolling things back). This paper proposes that today’s developments should be discussed and evaluated in the light of the long-term utopian (and alternative dystopian – see below) scenario. If we do that, this gives an extra argument for keeping services like health and schools free and in the public sector, and this will then be an indicator that a society is advanced and modern. Note that this contradicts the current conventional wisdom that privatisation and “user pays” are signs of modernity.

Having an eye for the long term also gives an incentive to look for and evaluate examples of already implemented “utopian” reforms in sectors where they are the exception to the rule. An example is the Belgian city of Hasselt, which has made all public transport free<sup>2</sup>.

The third criterion is the most challenging (and interesting), because it concerns change in public attitudes and behaviour. This is “LeGuinian internalisation”, so that that citizens automatically – *without experiencing this as a “sacrifice” on their behalf* – restrain themselves. This is not something that could be implemented on a significant scale today: Imagine an experiment where one made basic foodstuffs free for the taking. Such a system would break down since a large share of the population would over-consume and also throw away untouched or half-eaten food. But an area, admittedly somewhat trivial, where voluntary restraint works to a fair degree even today, is littering. A large share of the population does not throw waste on the street, even if it would be more convenient for them to do so. The “sacrifice” of taking the litter with you for later appropriate disposal is not considered as such, because the action is internalised and automatic. Most people also don’t leave their discarded TV sets and washing machines at the roadside, even if that is more “convenient” (and one can easily get away with it) than getting rid of such things in the mandatory manner. Such altruistic behaviour may be the exception to the rule, but gives grounds for optimism.

It gives support to those who hold that responsible socialisation of new generations by schools, the media and in entertainment is not futile. Note that this is not arguing the obvious, it is taking a position that is today seen as outdated and futile among many intellectuals. I refer to the eighties’ and especially nineties’ attitudes in advertising and entertainment (and even “post-modernist” esthetic-academic circles) – deriding enlightenment and the possibility of progress, and cultivating violence, chaos and decay for “esthetic” – or pecuniary – purposes. (A striking example of this intellectual current of the nineties was reported in the British newspaper *The Independent* 16 May 1995, where some TV commercials were criticised. One used a teenage suicide as a vehicle to advertise a product. Confronted with this the advertiser replied that this was not meant for the public in general. The target group were those who were “nihilistic, narcissistic and hedonistic”.) The last decade has seen an unusual alliance between the powers that be (“there is no alternative”), and the cultural/media avantgarde (“working for a better society is futile – and since we can’t do anything about it anyway: isn’t today’s world *fascinating* in all its cruelty?”)

In the light of the above it seems that one must start from scratch again, to restore the legitimacy of the view that socialisation towards responsible behaviour in relation to one’s community is both necessary and feasible. And this does not need to be promoted on moral or religious grounds – it may (also or alternatively) be promoted based on a long-range utopian vision.

### **3. The (feasible) capitalist dystopia**

A school in Marxism holds that capitalism cannot sustain indefinitely, due to a system-inherent persistent decrease of the profit rate (Shaikh, 1978, pp 232 - 235): Capitalists have to substitute workers with machines to keep up with the competition, whether they want to or not. This will increase their capital and mercilessly reduce their profit rate in the long run. Following this logic, as production becomes possible with only a small number of workers, conditions for creation of surplus value, exploitation and capital accumulation gradually wither. There is also a related marxist argument that since only “productive” workers create “value”, and most service and/or public sector work is considered non-productive, a completely service-dominated capitalist economy cannot uphold capital accumulation. There are, however, contradictions among marxists (and in Marx’ own writings) about how to define what is “productive” work. (Hunt, 1979).

---

<sup>2</sup> See <http://www.ils.nrw.de/netz/leda/database/cities/city0100.htm>

Regardless of these theories and positions, I will argue that there *is* a feasible scenario for viable “eternal” and strongly class-stratified capitalism – even when production is comprehensively automated. Such a future seems the more probable since it may be seen as an extrapolation of current trends. This dystopian society has the major share of its workers doing wage labour in capitalist service/servant (“s/s”) firms. Such activity is labour-intensive, and with low capital intensity. I use the term “servant” here to indicate the presence of firms catering to the rich – such as domestic help, leisure activities, security, luxury tourism, etc. This comes on top of (mostly privatised) services for the general population like (health)care, education, entertainment, media – which are also labour-intensive activities. A small minority of workers (just as in the utopian scenario above) is employed in the high-tech automated manufacturing and process industry sector. As long as a major share of the employed is in labour-intensive activities, this will ensure that the profit rate can be upheld, even if manufacturing is nearly wholly automated. And the profit rate in the highly automated manufacturing sector will be equalised with that of the s/s sector through the price mechanism. A large share of the population is unemployed, which ensures compliant labourers and high profit rates.

The prospect of chronic and very high unemployment in a capitalist future world is something that is not only described by critics of capitalist globalisation. It is considered natural or unavoidable by some far-seeing thinkers among the elite. Martin and Schumann (1997) report from a conference of the world’s most powerful in late September 1995:

“.....500 leading politicians, businessmen and scientists from every continent – a new ‘global brains trust’ ..... which is supposed to point the way to the ‘new civilization’ of the twenty-first century.

.....

From this point on [in the meeting, T.A.], the top-class group discussing ‘the future of work’ concerns itself entirely with those who will have none [this future scenario, having been launched at the conference, had an 80% unemployment rate, T.A.].

.....

The expression on everyone’s lips is Zbigniew Brzezinski’s ‘tittytainment’. The old Polish-born warhorse, who was Jimmy Carter’s national security adviser for four years, has continued to occupy himself with geostrategic questions. He thinks of ‘tittytainment’ (‘tits’ plus ‘entertainment’) in terms not so much of sex as of the milk flowing from a nursing mother’s breast. Perhaps a mixture of deadening entertainment and adequate nourishment will keep the world’s frustrated population in relatively good spirits.

Top managers soberly discuss the possible dosage and consider how the affluent fifth will be able to occupy the superfluous rest.

The pressure of global competition is such that they think it unreasonable to expect a social commitment from individual businesses. Someone else will have to look after the unemployed.”

A future world with 80% unemployment seems unrealistic. But the point of the above is that the world’s power elites are willing to accept such scenarios and prepare for them. Based on today’s trends, it seems more probable that employment will be higher, but in a dominant low-wage and very insecure s/s-sector.

Investors are especially eager to take over such activities that have until now been in the public domain. Critics of this have to a large degree explained this trend as being “ideology-driven”, i.e. that it is due to a strong neoliberal belief among decision makers that these activities will be run much more efficiently if privatised.

I suggest instead that the reasons are mainly material, not ideological. Consider these special characteristics of public sectors like health, caring, education:

1. They are – as opposed to other and non-essential services – socially necessary so they will always be in demand.
2. The costs will therefore at least to some degree be covered by the state.

3. These services will be locally and predictably demanded , sales are not dependent on success in a risky world market.
4. They are inherently labour-intensive and cannot be automated.

These characteristics make investment especially attractive, the first three obviously so. The fourth characteristic may at first glance not seem to fit this, since capitalists will always try to shed workers to reduce costs. So why is it attractive to enter a field where there are few possibilities for this? The keywords are “inherently” and “cannot”. These services *will* be in demand, and they *cannot* be much automated. When these are stable and lasting conditions for all competing firms in the field, the inherent labour intensity becomes an *advantage*, not a drawback. For when a large share of capitalists’ costs are for wages, and a small share for capital, the possibilities for significantly enhancing profits by a given percentage reduction of wage costs are greater than in a highly automated plant where capital costs dominate and wage costs are minimal. That said, the capitalist dystopia will also ensure acceptable and stable profits for the owners of capital-intensive automated plants, via the price mechanism: If profitability becomes low, plants will shut down and production will decrease. Demand for scarce goods will lead to increased prices, until the profit rate equals that in the s/s sector. The distribution of output between owners and workers in the large labour-intensive s/s sector – which depends on the balance of power between these two groups – then sets a benchmark for the profit rate for the economy as a whole. Hence, as long as there are plenty of workers employed by capitalists – regardless of this being in so-called non-productive jobs – strongly class-stratified and profitable capitalism may continue forever.

#### 4. Conclusions

Long-term and even “unrealistic” scenarios for future societies ought to be regular topics for public debate. Both positive and negative scenarios are useful. Dissemination and discussion of such scenarios will have positive impact on important political choices and decisions being made today. Contrarily, lack of such visions and discussions have detrimental effects.

One should be unafraid and confident about launching and supporting unconventional proposals or visions. For the mechanism of self-fulfilling prophecies is at work, for good or bad. One should work for awareness of this among those controlling the arenas for public discourse. Based on the recognition of this mechanism, one may argue that unconventional ideas should not be disparaged out of hand, but be given a fair chance in the media and elsewhere to compete with established thought.

Capitalism should not be considered a “stage in history” by its critics, but a system that may continue forever. In this there will then seemingly be an agreement between critics and supporters (one of the latter is Francis Fukuyama with his “end of history”). The difference however, is in the analysis of the probable characteristics of such a system, and whether there are better alternatives.

#### References

- Hogan, J. P. (1982), ‘Voyage from Yesteryear’, *Baen Books*; Reprint edition 1999.
- Hunt, E. K. (1979), ‘The categories of productive and unproductive labor in marxist economic theory’, *Science and Society*, Vol. 43(3).
- LeGuin, U. K. (1974), ‘The Dispossessed’, *Eos*; Reprint edition 1994.
- Martin, H. P. and Schumann, H. (1997) ‘The Global Trap: Globalization and the Assault on Prosperity and Democracy’, *Zed Books*.
- Marx, K (1875), ‘Critique of the Gotha Programme’, *Marx/Engels Selected Works, Volume Three*,

Progress Publishers, Moscow 1970.

Marx, K (1845), 'The German Ideology: Part I', *The Marx-Engels reader*, New York : Norton, 1972.

Reddy, A.K.N., Goldemberg, J., Johansson, T.B. (1989) 'Energy for a Sustainable World', *John Wiley & Sons*

Shaikh, A (1978) ' An introduction to the history of crisis theories'. In *U.S. Capitalism in Crisis*.

New York: Union for Radical Political Economics.